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AUGUST 27, 2001 • VOL. 35 • NO. 35 • 55 COPY

KATHERINE LAMBERT

Buying a big enterprise management suite seemed like a good idea when The Motley Fool was preparing for enormous systems growth. But then came maddening news from the vendor, along with the dot-com crash. Writer Sami Lais chronicles a 10-month saga that could happen in any IT department.

Story begins on page 46.

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SUPPLY CHAIN HINDERS EURO CONVERSION

IT managers could be hit hard by E.U.'s transition to single currency standard

BY LUCAS MEARIAN

With only four months left before 12 of the 15 European Union countries will be required to use a single currency, IT managers are worrying that their companies' supply chains are unprepared for the euro and that even those suppliers that think they're ready really aren't.

Companies that haven't already started their euro transition planning won't be ready by the Economic and Monetary Union's Jan. 1 deadline, according to Boston-based AMR Research Inc. And 40% of European businesses — mainly small to medium-size companies — have yet to begin their euro projects, said Simon Pollard, an analyst for AMR working in London.

Of those firms that will be ready, nearly half said they will be forced to help others that aren't prepared in order to avoid supply chain problems, according to a survey of 400 European executives by the Paris-based Association for the Monetary Union of Europe.

GM Europe put together a euro advisory package for its 3,200 independent car dealers and second- and third-tier parts suppliers. It has also set aside staffers to assist businesses that are ignoring the impending deadline. GM spent two years and millions of dollars converting its internal IT systems in a project that's expected to be completed in three weeks.

"Since very early in 1999, we've given our dealers the option of working in euros or the local currency. Ten percent

Euro, page 14

MASSIVE ASP DEAL 'UNPRECEDENTED'

Every Arizona student to get Microsoft Office

BY BOB BREWIN

In what may be the largest undertaking of its kind to date, the state of Arizona is taking an application service provider approach to delivering educational software and productivity applications to 850,000 students in all 1,200 of its schools statewide. The initiative involves what state officials described as an "unprecedented agreement" covering the use of Microsoft Office applications.

The Arizona School Facilities Board so far this year has awarded $172 million in school IT infrastructure contracts. The ASP agreement was reached earlier this month with Cox Business Services, a unit of Cox Communications Inc. in Atlanta.

Philip Geiger, executive director of the board, said the contract with Cox will provide school administrators and students with access to more than 7,000 software titles at a cost of

ASP Deal, page 16

BANK PUTS TWIST ON OUTSOURCING

Unique pact will keep Barclays' apps in-house

BY LEE COPELAND

London-based Barclays PLC has signed a package deal with IBM aimed at bringing the bank's IT assets to the Web by crafting a number of custom applications over the next three years.

The $25 billion bank has joined a growing list of companies reducing the portfolio of vendors they work with.

The three-year deal, which will cost £35 million — about

Outsourcing, page 65

JUST THE FACTS

Project Paybacks

Barclays' software and services deal is expected to yield the following benefits:

- **Reduce the number of decision points within its IT organization**
- **Eliminate several products and suppliers**
- **Cut maintenance costs by limiting the number of products it buys from different vendors**
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- **Speed application development by eliminating extraneous project integration work**

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PINK-SLIP BLUES

Pink slips are catching a growing number of IT pros off guard this summer. In two careers stories, *Computerworld* looks at how laid-off workers can recover quickly, and how you can make the most of one of the growing number of pink-slip parties being held in major cities across the U.S. **PAGES 30-33**

HELP FOR THE HELP DESK

IT departments can cut costs and improve service levels using help desk management software, but first companies must work through integratioo and configuration issues, say IT professionals like Tom Nohelty of Wausau Financial Systems. **PAGE 50**

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www.computerworld.com/q?q4000

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ONLINE

CRM ROAD MAP

Jerry Sparger of Global Business Solutions outlines his eight-step recipe for customer relationship management success.
www.computerworld.com/ecommerce

WHO'S MAKING MONEY OFF YOUR WEB SITE?

Unfortunately, it might not be you. Todd Shipley of the Reno, Nev., Police Department's Financial/Computer Crimes Unit details how IT managers can protect themselves from credit card fraud.
www.computerworld.com/security

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AT DEADLINE

New Judge Chosen In Microsoft Case

A federal appeals court on Friday returned the ongoing antitrust case against Microsoft Corp. to the U.S. District Court for the District of Columbia. Through a lottery, the District Court tapped Judge Colleen Kollar-Kotelly to replace Judge Thomas Penfield Jackson. Barring a settlement, Kollar-Kotelly will consider the issue of remedies and whether Microsoft broke antitrust laws by tying source code from the Internet Explorer Web browser to the Windows operating system.

Court Refuses to Delay NextWave Case

The U.S. Court of Appeals on Thursday rejected a Federal Communications Commission request to delay implementing the court's June decision forcing the agency to return wireless spectrum licenses to NextWave Telecom Inc.

Hawthorne, N.Y.-based NextWave, which filed for bankruptcy protection in 1998, is raising funds to build a $5 billion network to offer third-generation wireless voice and data services in the U.S. These services would occupy spectrum that NextWave bid for in 1996 but which the FCC reclaimed when the carrier defaulted on payments.

In June, the Court of Appeals found that the FCC was in violation of the U.S. Bankruptcy Code when it canceled NextWave's licenses. The FCC said it will take its case to the U.S. Supreme Court.

Correction

A brief in the business section of our Aug. 13 issue regarding a contract to supply a new information system and claims payment services to the Georgia Department of Community Health should have stated that Computer Sciences Corp. teamed with Dallas-based Affiliated Computer Services Inc. (ACS) on what was actually an ACS contract with the state.

IBM Enlists ISVs in War Against Oracle

Analysts say Oracle's push to dominate apps is helping IBM's database business

BY DAN VERTON
SOMERS, N.Y.

Strategic alliances with independent software vendors (ISV) have proved to be a successful way for IBM to gain new customers for its DB2 database software. And IBM appears to be getting help on that front of the database war from an unlikely source: Oracle Corp.

At a press briefing here last week, IBM executives said the company's strategic alliances with ISVs — such as SAP AG, J. D. Edwards & Co., PeopleSoft Inc., Baan Co. and Siebel Systems Inc. — have generated more than $1 billion in revenue during the past year. And much of that, they claimed, came at the expense of rival Oracle.

However, the more telling point in IBM's message is that Oracle may be partly to blame for what IBM is calling a slow but steady shift in favor of DB2.

James Kelly, IBM's vice president of marketing, quoted PeopleSoft CEO Craig Conway as saying, "IBM is the perfect partner. Oracle goes out and proclaims that you are an idiot."

Steve Swasey, a spokesman for Pleasanton, Calif.-based PeopleSoft, confirmed the comment by Conway. He added that PeopleSoft "will encourage" customers to go to DB2 not only because it's a better database, but also because "Oracle will go out and spend the money to compete against us in the software business."

Oracle Missteps

Studies by industry analysts also point to a direct link between Oracle's worsening relationship with various ISVs and the changing fortunes of DB2.

In a report published this month titled "Oracle Under Fire," Betsy Burton, an analyst at Stamford, Conn.-based Gartner Inc., wrote, "Oracle has made significant missteps that are causing the chinks in its corporate armor to become more visible."

Those missteps include supporting a controversial pricing plan for 18 months, refusing support for its application user group and significant concerns surrounding the stability of the OracleIli enterprise resource planning suite, according to Burton.

These issues are "really affecting their credibility in the marketplace," said Burton.

After reporting a paltry database revenue growth rate of 6% for the third quarter, Oracle's fourth-quarter database revenue declined by 5%, she said.

A March report by New York-based Salomon Smith Barney Holdings Inc. concluded that Oracle's decision to compete directly with ISVs is partly to blame for that downturn.

"IBM's Unix database business ... has been growing at three to four times the industry average for the last two or three quarters, helped by Oracle's practice of competing with its ISVs," the Salomon Smith Barney report stated.

IBM has reported 15 consecutive quarters of revenue growth in its database business, said Janet Perna, general manager of IBM's Data Management Solutions. In fact, more than 42% of DB2 sales last year were "influenced" by ISV partners, she said.

For example, DB2's penetration into the SAP and PeopleSoft user markets has doubled year over year, and 35% of all new Siebel sales "went in with DB2" being recommended over Oracle9i, Perna said.

Siebel, however, puts that figure at 27%.

The Salomon Smith Barney study supports IBM's basic premise. ISVs, "who were once responsible for approximately one-third of Oracle's revenue, have replaced Oracle with IBM's database solution as their standard software development platform for both internal and external applications," the report states. "Oracle's 'go it alone' approach has caused leading application developers ... to abandon Oracle and adopt IBM's DB2 database."

An Oracle spokesperson couldn't be reached for comment. But in an interview in June, Oracle CEO Larry Ellison downplayed the impact his company's participation in the application business has had on database sales.

Oracle is "by far the most popolar database with SAP, PeopleSoft and Siebel users," said Ellison. "A lot of this is marketing buzz that IBM has created with little or no reality behind it."

He did, however, acknowledge that "IBM is in a partnership with SAP, [and] we're [SAP's] No. 1 competitor."

Mike Gilpin, an analyst at Giga Information Group Inc. in Cambridge, Mass., was also critical of Oracle's application strategy. "Oracle has definitely alienated the other application vendors because not only have they chosen to compete with them, but their applications play has been very monolithic in nature," said Gilpin. "Oracle's 'my way or the highway' [approach] does not encourage a best-of-breed blend of applications."

Oracle faults IBM's best-of-breed approach for being costly and creating an integration nightmare for users, but Kelly said the strategy has led to 68 individual alliances with ISVs, many of which are pushing DB2 over Oracle. "Our role is to be the partner, not the predator," said Kelly.

Rich Niemiec, president of the International Oracle Users Group-Americas, a Chicago-based organization that represents Oracle database users, said inaccurate media coverage and misleading analyst studies are doing Oracle "a disservice" and "pushing people to other databases."

If analysts had to contend with the technical problems experienced by users of other databases, "100% of them would be recommending Oracle," he said.

Narrowing the Gap

IBM says it's increasing its share of the worldwide database market and gaining on No. 1 Oracle. Below are the numbers for the database market leaders in 2000:

SOURCE: DATAQUEST INC., JAN. 2001

DB2's Changing ISV Fortunes

SAP replaced Oracle with DB2 as its preferred database platform for both internal applications and customer production development.

Siebel has moved its own development off Oracle onto DB2 and conducts joint development, sales and marketing with IBM. Siebel expects DB2 sales on its systems to jump to 50% this year.

PeopleSoft is using DB2 as its primary Unix platform for PeopleSoft 8 and is moving its own production deployment of PeopleSoft 8 off of Oracle to DB2.

SOURCE: EDWARDS, SAMPSON & ASSOCIATES INC., AUG. 2001

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www.computerworld.com/QL?c1000

Broadband Seen as Cure for Economic Ills at Aspen Summit

But cable modems, DSL don't reach enough homes yet

BY PATRICK THIBODEAU
ASPEN, COLO.

Imagine that broadband is widely deployed. Millions pay subscription fees to watch movies and listen to music online, while corporations do more to encourage telecommuting and remote business activities because of the ubiquitous availability of always-on, high-bandwidth connections.

That vision was at the forefront of this year's Aspen Summit, and it's been a powerful tonic for the high-tech executives and policymakers who are ailing from the bursting of the dot-com bubble and the economic slump.

But that vision is blurred by a harsh reality.

High-speed connections via Digital Subscriber Line (DSL), cable modems and satellite currently reach less than 10% of all homes connected to the Internet, and new adoption of the services is growing slowly or even stagnating.

Mass-market adoption of broadband at a rate that's high enough to generate an economic stimulus by prompting companies to offer new Net-based services may still be years off, said those involved with its deployment.

Widespread availability of broadband clearly could have an impact on the way corporations operate. For example, telecommuting work that requires the online transfer of large files, such as the image files used by insurance underwriters, would become more practicable.

"That's where it is very advantageous," said Larry Erb, vice president and CIO st ING Re, a reinsurance company in Denver.

A Godsend

And for companies like Honolulu-based Fletcher Pacific Construction Co. that run expensive leased lines to remote sites, alternative broadband services would be a godsend, said Tim Llena, the construction firm's IT manager.

The lack of broadband access among workers "is the No. 1 stumbling block that employers face with telecommuting these days," said Gil Gordon, a Monmouth Junction, N.J.-based consultant.

Broadband deployment is spotty at best, even in large metropolitan areas. And the main reason for that is the high cost of upgrading network equipment, said Eric Rasmussen, a senior consultant at TeleChoice Inc. in Tulsa, Okla.

Broadband is also the subject of an ugly legislative battle in Congress that's pitting telecommunications companies against one another, with consequences for the technology's rollout.

The former Baby Bell telephone companies complain that the federal Telecommunications Act of 1996 is deterring broadband deployment. The act, which required the regional Bells to open their networks to voice competition, is being wrongly applied to broadband, said Tom Tauke, senior vice president at New York-based Verizon Communications.

"Competitors use our facilities at rent-control rates, and do so without investing a dime of their money," said Tauke, speaking at the conference, which was sponsored by The Progress and Freedom Foundation in Washington.

Tauke said Verizon is investing less in broadband than it might otherwise because it can't get the investment returns it makes on other services, such as wireless.

But David Dorman, president of AT&T Corp., charged that the local Bells "are engaged in a major offensive to dominate the broadband [market]" and are attempting to "eviscerate" the telecommunications act that ended the local telephone monopolies. AT&T has to lease local loops from the regional Bells for its DSL service.

Reps. Billy Tauzin (R-La.) and John Dingell (D-Mich.), earlier this year introduced a bill in the House of Representatives known as the Internet Freedom and Broadband Deployment Act of 2001. A similar measure has been introduced in the Senate.

Dorman said the bill, which is intended to reduce some of the legislative burdens faced by the Baby Bells, would "wipe out" AT&T's investment in DSL as well as that of other Bell competitors.

AT A GLANCE

What's Broadband?

There's some dispute about just what constitutes "broadband" high-speed access, but the term generally applies to DSL, cable and satellite wireless.

Availability: Cable and DSL services are spotty, even in large metropolitan areas.

Telecommuting: There are approximately 24 million telecommuters, according to the International Telework Association and Council, a Washington-based trade group. That number is expected to rise 10% to 15% next year. The rate of growth would increase if broadband were ubiquitous.

Current usage: About 9% of Internet-connected homes have broadband access, various industry watchers estimate.

Awaiting The Content

ASPEN, COLO.

There's no point in building a stadium unless there's a team to play in it, and that's about where Internet broadband is now. The content needed to drive consumers to broadband is still in the making, said high-tech executives at this year's Aspen Summit here.

In the view of some content providers, the big lure to broadband will be movies, interactive games and music.

"The movie industry welcomes the Internet," said Jack Valenti, president and CEO of the Motion Picture Association of America. "It has vast potential to be a wonderful new delivery system," provided that copyright protections are in place, Valenti said.

Konrad Hilbers is CEO of Napster Inc., the file-sharing service that was shut down by a federal court until it stopped the sharing of copyrighted music. His goal is to turn the Redwood City, Calif.-based company into a "legitimate business."

Napster plans to launch a subscription-based model for music later this year. It hasn't decided what to charge, "but it is quite obvious that we are challenging some of the music industry's business model, most particularly on CD pricing," Hilbers said.

– *Patrick Thibodeau*

No Relief This Year for High-Tech Firms

ASPEN, COLO.

The high-tech sector isn't expected to recover this year because of inventory buildups and slower demand by end-user companies, said economic experts.

Kathryn Shaw, a professor of economics at Carnegie Mellon University in Pittsburgh and a former Clinton administration adviser, said the downturn – which she called a "recession" – was caused by several shocks. The foreign exchange rate – the price of U.S. currency against other nations' currencies – rose, causing manufacturing to slump. Rising energy costs and a declining stock market also affected the economy, she said.

"The digital economy can't prevent these shocks," said Shaw, speaking last week at the Aspen Summit here.

Shaw also cited a soaring buildup of inventory that hurt the high-tech sector. "When [the downturn] hit, they didn't foresee how much their inventories had been overbuilt," she said. "Given this increase in capacity . . . that was way overdone, it will take some time to continue to pull down that inventory correction and to return to production again." She wouldn't predict when recovery would begin but said this year will remain weak.

"Certainly, things look grim," said Bruce Mehlman, assistant secretary in charge of technology policy at the U.S. Department of Commerce. "The collapse of the tech stock bubble has wiped out $5 trillion in paper wealth," Mehlman said. "Business rate of investment in new equipment and software has plummeted from a positive 18% to a negative 14.5% in just 18 months."

"Some of the current downturn is fairly representative of a natural correction that happens after the incredible activity of the last five years," Mehlman added.

But this correction "is not the same as an end to revolutionary changes brought by the underlying technology," he said. "Even as markets were plummeting last year, global Internet usage grew by more than 67%; B2B e-commerce grew 132%."

The Bush administration last week said the economy is expected to grow a relatively healthy 3.2% next year.

"I'm really bemused by the doom and gloom that's out there," said Thomas Siebel, CEO of Siebel Systems Inc., a San Mateo, Calif.-based maker of business application software. "We need to get a grip on what's happening here.

"We got into kind of a bubble situation, and now some sanity is returning to the world," said Siebel. "That's not a problem."

– *Patrick Thibodeau*

Users Support HP's New Pricing, Infrastructure Model

But many say key problems remain

BY JAIKUMAR VIJAYAN
CHICAGO

HEWLETT-PACKARD Co.'s strategy to help customers build an always-on, pay-as-you go, Internet-based IT infrastructure garnered support from users at the HP World 2001 user group show here last week.

But there are several core technology and business issues that need to be addressed before the company can fully deliver on that vision, users said.

Under HP's Always-on Internet Infrastructure strategy, the company is building hardware, software and electronic service technologies that it claims will enable users to build powerful, highly scalable and flexible data center architectures at a lower cost than today's technologies permit.

Instead of having to dedicate specific resources to specific applications, as is the case with today's data centers, users increasingly will be able to share and reprovision their computing resources across multiple applications as the need arises, said HP.

In this model, a server that runs one application in the morning can be freed up to run another one at night — or even instantly, if the need arises — with all of the reprovisioning work being managed from a central console. Applications will be able to use the resources of multiple servers within one data center or across multiple data centers.

This kind of always-on infrastructure will allow companies to make better use of their computing resources, deliver better process efficiencies and provide for greater scalability, said Jean-Louis Matton, a systems and network administrator at the hospital affiliated with the Catholic University of Louvain in Brussels.

HP said it will also provide usage monitoring and management technologies that will let companies pay for this system on a utilitylike pay-for-use model.

In the Right Direction

Technologies such as the HP Hyperplex server consolidation platform and the Instant Capacity on Demand feature on its high-end Superdome Unix servers (see story below), are examples of enabling technologies that HP will deliver in the next several months, said Andy Ledbetter, an HP manager, during a technical session at the show.

"As a user, this is generally a direction I'd like to see HP move in," said Edward H. Witkow, director of IT at Metaldyne Corp., a $2.3 billion supplier of metal components in Plymouth, Mich. The utilitylike computing HP is talking about will lower costs and improve the predictability of IT budgets, said Witkow, who is also chairman of Interex, the Sunnyvale, Calif.-based user group that organizes HP World.

But there are issues that HP needs to address first, he said. For instance, HP's Instant Capacity on Demand technology lets users quickly add capacity when needed. But so far, there's no way for users to decrease that capacity when it's no longer needed, Witkow said.

Similarly, the success of usage-based pricing depends on how HP and others will charge, said a user at a large aerospace company who didn't want to be named. Usage models like the kind being pushed by HP make little sense if they end up costing more than an outright purchase would, be said.

Companies also need to invest in high-speed LAN, WAN and wireless connections among servers, mobile devices and data centers before the kind of shared-resource environment HP is talking about can become a reality, users said.

HP's moves are part of a bid by the company to transform itself into a more IBM-like, services-led organization at a time when its core hardware business seems to be faltering. The firm has lost market share to both IBM and Sun Microsystems Inc. and ranked fourth behind Compaq Computer Corp. last year in overall server sales.

As one of the companies that went aggressively after the dot-com market, HP is also one of the hardware vendors that has been hardest hit in the current market slowdown. Despite having recorded a profit of more than $100 million in the last quarter, overall revenue dropped 14% to just over $10 billion.

AT A GLANCE

HP World

The show was organized by the Interex user group.

About 7,500 people attended this year's show – down 25% from the last one.

Interex is one of the oldest North American groups of its kind, with a current membership of about 30,000 companies.

Last year, Interex members together purchased more than $14 billion worth of HP equipment and services.

MORE THIS ISSUE
For more HP coverage, see page 22.

Superdome Unix Server Sales on Upswing, Says HP

System expected to be key in reversing hardware decline

BY JAIKUMAR VIJAYAN AND SAMI LAIS

After a relatively slow start, sales of Hewlett-Packard Co.'s high-end Superdome Unix servers are picking up nicely, according to a senior company official.

The 64-processor system, which was launched last fall, is HP's highest-end Unix system and is expected to be a key factor in the company's bid to reverse its recent decline in hardware revenue.

The system features several mainframelike capabilities such as hardware- and software-based partitioning, online addition and replacement of components and sophisticated workload management. Superdome also supports a capability called Instant Capacity on Demand that lets users buy systems with more processors than they need and then turn them on when necessary.

High-End Competition

Such features make the Superdome a powerful competitor in the high-end server space against boxes such as Sun Microsystems Inc.'s popular E10000 servers, said Tony Iams, an analyst at D.H. Brown Associates Inc. in Port Chester, N.Y.

For instance, First Union Corp. is using Superdome's partitioning capabilities and its high-availability features to consolidate workloads from multiple smaller servers, said Julie J. Smith, an IT manager at the Charlotte, N.C.-based financial services giant, during a technical presentation at last week's HP World show in Chicago.

But a failure to market the benefits of the systems and a steep entry price may have contributed to slower-than-expected sales so far, Iams said.

"My sense is that Superdome has not gotten as much traction in the market as HP would have liked to at this stage," Iams said.

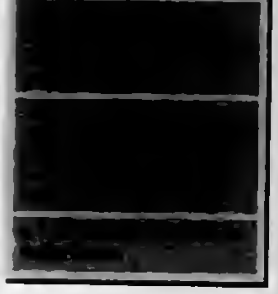
But Marilyn Edling, a vice president at HP's enterprise server group, said that criticisms about Superdome sales are off-base.

"Superdome is ramping up nicely, given the unfortunate timing of its release just as the economy was taking a downturn," she said. "We've gotten strong acceptance, even among companies that haven't traditionally been HP customers."

Superdome sales are going to be crucial for HP this year. The company lost market share to both IBM and Sun last year and also trails Compaq Computer Corp. in overall server sales.

HP needs to "hit a home run" with Superdome to reverse the decline it saw in hardware sales last year, according to a June server market report from IDC in Framingham, Mass.

Server Slowdown
Superdome's success will be crucial for HP this year.



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BRIEFS

Novell Sluggish But Beats Expectations

Despite continued sluggish sales, Novell Inc. last week reported third-quarter earnings that slightly beat analysts' expectations. Novell reported net sales of $247 million, a drop of 8% from the same quarter last year. Sales from its large network site-license business – which accounted for 60% of its revenue – totaled $167 million in the third quarter, a decline of 3% from the previous quarter.

Intel Launches Two Compilers for Linux

Intel Corp. last week launched two compilers designed to allow developers to optimize Linux applications for Intel's Pentium 4 and Itanium processors. The company said new versions of the Intel C++ Compiler for Linux and the Intel Fortran Compiler for Linux, both of which will include OpenMP support, are designed to simplify application development for multiprocessor computers.

Both products will be available next month and priced at $300 each when downloaded from Intel's Web site or $499 if purchased as a CD-ROM kit.

Intel, Compaq Team On Development of Handhelds, Apps

Intel and Compaq Computer Corp. will partner to support development of wireless Internet-access devices and applications. Under the agreement, Compaq will support the Intel Personal Internet Client Architecture (PCA), Intel's blueprint for building third-generation wireless devices and software for combining voice and Internet access, the companies said in a statement. Compaq will also offer its iPaq Pocket PC, which is based on Intel's StrongARM processor, as a reference platform in Intel PCA developer kits.

Roto-Rooter Uses Packet Shaping to Unclog Nets

Boosting WAN performance helps users get most out of existing frame-relay circuits

BY JAMES COPE

CLOGGED PIPES on wide-area networks are prompting some companies to turn to packet shaping to clear a patb for priority traffic instead of adding bigger network pipes.

For example, Roto-Rooter Services Co. this week will install a hardware device called WiseWan at its new call center in Fort Lauderdale, Fla., according to Robb Thomas, communications manager at the Cincinnati-based sewer and drain pipe services franchiser.

WiseWan, from NetReality Inc. in Santa Clara, Calif., lets network managers reserve portions of available bandwidtb on any given WAN connection by type of application, effectively giving packets from one application higher priority on the network than packets from another.

Thomas said be already has two WiseWan units in place, one on a 1.5M bit/sec. frame-relay hub in Cincinnati that connects to sites nationwide and one on a 768K bit/sec. circuit at a Chicago call center that manages operations for eight remote locations.

He uses the WiseWans to set aside a portion of smaller private virtual circuit (PVC) bandwidth — some running at 64K bit/sec. and costing $250 to $300 per month per circuit — hosted by the Cincinnati and Chicago locations for Roto-Rooter's proprietary customer resource management application. The remainder is split between Lotus Notes and Web browser applications.

Thomas said packet shaping has reduced customer wait time and has held down service provider costs by squeezing more performance out of existing frame-relay circuits.

Thomas said moving up to bigger pipes wouldn't necessarily resolve application response issues because there's still no guarantee that an adequate amount of bandwidth on any given pipe would be specifically available for mission-critical applications. "Going from 64K bit/sec. to 128K bit/sec. on our smaller PVCs could easily double our service provider costs," he added.

Mike Misterek, a network manager at PepsiAmericas Inc. in Rolling Meadows, Ill., is using packet shaping to make sure mission-critical network traffic isn't delayed by Web browsing and e-mail traffic.

Misterek said his company uses Packet Shaper from Packeteer Inc. in Cupertino, Calif. Although both Packet Shaper and WiseWan prioritize traffic by application, they work in different ways, said Tere Bracco, an analyst at Current Analysis Inc. in Sterling, Va.

Packet Shaper, Bracco said, sits between the LAN and the router going out to the WAN. NetReality's WiseWan, in contrast, sits between the router and the WAN, said Bracco.

"WiseWan works with your service provider to ensure priority for an application when packets leave the site," Bracco said. "[But] if you have a virtual private network where the packets are encrypted before they get to the router, the WiseWan can't recognize the application and can't assign a priority to it. Packeteer, on the other hand, because it's on the LAN side of the router, will identify applications and assign priorities to packets that go with those applications before they hit the router."

Yet the Packeteer product doesn't have the ability to look at traffic conditions across the WAN to the same degree WiseWan does, Bracco said. What's needed but not available are devices that can do packet analysis on both the LAN and WAN sides of the router, she said.

Quick Link For more information on this topic, head to our Networking Knowledge Center
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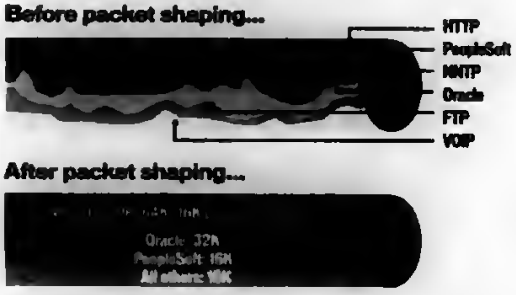
Each App Gets Its Piece of the Pipe

Packet shaping lets network managers reserve portions of available WAN bandwidth by application.



Cisco Reorganizes Business

BY DOUGLAS F. GRAY

Cisco Systems Inc. announced last week that it will reorganize itself into 11 distinct technology groups as part of an effort to address what it sees as consolidation in the communications market.

The new structure, which will include groups focused on areas such as network management services, routing and storage products, will replace a structure that was geared toward addressing three lines of business: the enterprise, service provider and commercial markets, according to Cisco.

The lines-of-business approach worked in the past because the vendor was dealing with distinct customer segments and product requirements, Cisco President and CEO John Chambers said in the statement. However, consolidation in the market for communications products has blurred the lines between those segments, he said.

The other technology groups under the new structure will be access, aggregation, Cisco Internetwork Operating System technologies, Internet switching and services, Ethernet access, optical, voice and wireless. "By consolidating a large number of items under a fewer number of managers, there's more focus," said analyst Tam Dell'Oro at Dell'Oro Group Inc. in Redwood, Calif.

Gray writes for the IDG News Service.

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PeopleSoft Delivers CRM Apps to a Friendlier IRS

Agency signs $10 million deal in bid to save money, become more user-friendly

BY TODD R. WEISS

THE MUCH-maligned Internal Revenue Service is pushing forward with its ongoing plans to be more user-friendly by buying customer relationship management (CRM) software from PeopleSoft Inc.

The deal, which is valued at more than $10 million, will provide the IRS with the full PeopleSoft 8 CRM suite to make it easier for taxpayers, professional tax preparers and the IRS itself to obtain tax records and other information online around the clock, according to the company.

The sale will be formally announced today at Pleasanton, Calif.-based PeopleSoft's user conference in Atlanta.

"Certainly, the IRS wants to be more open," said Ron Sullivan, general manager of federal government sales at PeopleSoft. "This is a statement by them that they are reaching out" to taxpayers and preparers to make it easier to communicate with and get needed tax information from the agency, he added.

The IRS, which is part of the U.S. Department of the Treasury, will obtain enterprise licenses for the Web-browser-based software package, allowing it to run the application on the multiple operating systems used by the agency, including Unix and Windows NT. That adaptability was a major reason why the IRS chose to go with PeopleSoft's application, Sullivan said.

The first phase of the deployment will begin next summer, with full implementation expected by 2004.

An IRS spokesman said the decision to use PeopleSoft's CRM software is part of the agency's ongoing effort to modernize and become more customer-friendly.

"It is all based on the customers, the taxpayers," he said. "It's going to help everybody."

The CRM package from PeopleSoft will allow the agency to create separate tax data Web portals for professional preparers and taxpayers and build a private portal for IRS employees.

"We're trying to get the information to people in different sectors — to be able to access the information when they want it and how they want it," the spokesman said.

By moving data access to the Web, the agency will be able to save money that's now spent on call centers and live agents who provide such information over the telephone, he said.

The agency's IT infrastructure has evolved over the past 35 years and often falls short of being able to conduct operations efficiently, according to the spokesman.

By moving to CRM software and other modernization steps, including transferring massive amounts of tax information from old batch-process flat files into new database applications, the IRS is slowly heading toward beneficial changes, he said.

Sharon Ward, an analyst at Hurwitz Group Inc. in Framingham, Mass., said the move to CRM could make it easier for taxpayers to deal with the agency. She said that it's ironic that such a move is coming from the IRS.

"I do find it humorous to hear 'IRS' and 'CRM' in the same sentence together," she said. "I think it's important that the government is realizing that it may have a monopoly but that it can't get away with acting like one."

Sheryl Kingstone, an analyst at The Yankee Group in Boston, said the shift to integrated CRM will allow the IRS to see real financial savings by pushing more taxpayer inquiries to the Web and away from telephone interactions, which can be costly.

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>
> SHARON WARD, ANALYST, HURWITZ GROUP

"That's the major trend of CRM: to get people out of the call center and into self-service," she said.

Earlier this month, PeopleSoft won a contract with the U.S. Department of Defense to deploy the company's human resources management software to oversee the records of 3.1 million military personnel around the world. ▶

PeopleSoft to Make Big Push for Upgrades To Latest Version of Its Flagship Product

But few users have jumped to last year's Version 8

BY MARC L. SONGINI
ATLANTA

A year after its release, PeopleSoft Inc.'s flagship Web-based collaborative product, PeopleSoft 8, has yet to catch on with the majority of its users.

In addition to rolling out wireless and portal technologies, executives at the Pleasanton, Calif.-based software firm said a big thrust at its user conference here this week will be to persuade the holdouts to upgrade to Version 8. Only 2,000 of PeopleSoft's 5,000 customers have started implementing Version 8.

Diana Kimmel, a business solutions director at Sprint Corp., is one of those users PeopleSoft will be trying to sway toward the upgrade.

Sprint now uses a highly customized version of PeopleSoft 7.5 for internal supply chain transactions, says Kimmel, who explained that she's working to make the business case to upgrade to Versioo 8.

"With any software upgrade, there is a bit of the unknown," she said.

But analysts warned that the softening economy and slashed corporate budgets will likely make Version 8 a tougher sell than most other migrations.

"Customers must vet plans for PeopleSoft upgrades against other demands on limited funding," said John Hagerty, an analyst at Boston-based AMR Research Inc.

But it's not just the economy that's holding some users back. Those users who have begun to upgrade to Version 8 have hit bumps in the road, according to a recent report from AMR. The report warned of "rumblings from PeopleSoft 7 users whose upgrades are taking much longer than expected, meaning they may not be live on Version 8 when Version 7 support ends."

Reaching for Wireless Users

In addition to pushing upgrades, PeopleSoft this week is expected to unveil a development tool kit to more easily enable wireless access to enterprise resources.

The company also said it plans to announce a chief financial officer portal, as well as recruiting and services automation modules. And as part of a midmarket outreach, PeopleSoft said that it's planning to roll out customer relationship management (CRM), sales and marketing, and procurement and distribution modules specifically for medium-size enterprises.

Portals are of particular interest to Carol Bogardus, director of human resources IT at Genentech Inc., a South San Francisco-based biotechnology company.

Genentech went live last month with PeopleSoft 8 human resources payroll and benefits modules and is now exploring the vendor's CRM, workforce analytics and recruitment products.

"Our plan is to begin to roll out self-service applications, and portals play a big role in that," said Bogardus. ▶

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www.computerworld.com/q/?kt300

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Amazon.com Seeks Corporate Customers

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E-Shopping Grows Despite Economic Dip

Online sales in the U.S. continue to grow, according to research from Forrester Research Inc. in Cambridge, Mass. Total U.S. online spending increased from $3.2 billion in June to $3.98 billion in July. The number of households shopping online increased to 14.7 million from 13.1 million in June.

SingTel's Export Question Resolved

Following the Australian government's decision to allow Singapore Telecommunications Ltd.'s planned takeover of Cable & Wireless Optus Ltd., the U.S. Department of State has said SingTel doesn't need a new export license for any U.S. technology it may acquire in the takeover.

Microsoft Reveals Windows XP Pricing

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Continued from page 1

Euro

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Only 7.9% of companies in the euro zone currently maintain their accounts in euros, according to statistics from the European Commission, three years after European brokerages and banks converted to the euro.

Pollard said the unpreparedness of vendors and suppliers won't create a catastrophe in the European marketplace, but it will cause supply chain slowdowns and force some small and medium-size businesses to revert to using paper invoices, bound ledgers and filing cabinets.

LUDWIG: Du Pont is ahead of schedule in its euro-conversion project.

But Noel Hepworth, head of the euro conversion project at the European Federation of Accountants (FEE), an industry trade group in London, said companies that aren't ready will quickly be forced out of business by large manufacturers that will refuse to deal with them.

The problem with not planning for the euro is that conversion projects are complicated, take from three to nine months and involve multiple software programs that must link payroll, accounting, invoicing, bank reconciliation systems and other applications, Hepworth said.

FEE recently sent "euro survival kits" to hundreds of companies requesting that they in turn send kits to their supply chain partners at $55 per copy. Each kit includes information on conversion techniques, the risks of failing to convert and the specific changes necessary for IT systems.

"If [an enterprise] bought 500 copies, for example, it would have cost them 25,000 euros. That's a very small amount of money in order to protect your supply chain," Hepworth said. "We've had no response."

But progress is being made. According to Hans-Joachim Wurth, EMU program director at SAP AG, three-quarters of the 6,700 SAP installations in the euro zone have successfully converted to euro accounting, and the rest of the company's customers are expected to be in compliance by Jan. 1.

The euro conversion for SAP costs a company about 1% of its annual revenue, according to an SAP spokesman.

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The other conversion issues for Du Pont have been related to converting balance sheets or installing fixes on PCs to ensure that they can display and print the euro sign, Ludwig said.

"The issue isn't what happens after Jan. 1; it's what to do with payables and receivables generated in 2001 but only received in 2002," he said. "That's why we encourage our people to use the euro today."

Patrick O'Beirne, a principal at Systems Modelling Ltd., a consulting firm in Wexford, Ireland, said a majority of companies fail on their first attempt to convert their systems to the euro.

Only 20% of companies' euro conversion software has been certified by the London-based Business Application Software Developers' Association Ltd., O'Beirne said. Furthermore, "on the basis of figures I've found so far, the majority are converting incorrectly and don't know it," O'Beirne added.

Then there are the issues related to converting local currency to euros and then to pounds or francs for countries that aren't part of the EMU. For example, a database field based on French francs would have to be expanded from two decimal point places to six to accommodate the euro.

"The euro has impacts right down into areas you don't think it will," GM's Aze said. "You don't tend to think of them because you tend to think of only your own currency."

Currency Converts

The following European countries are participating in the EMU or plan to use the single euro currency as of Jan. 1, 2002:

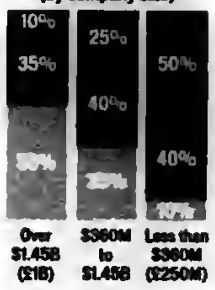
- Austria
- Belgium
- Finland
- France
- Germany
- Greece
- Ireland
- Italy
- Luxembourg
- The Netherlands
- Portugal
- Spain

Only the U.K., Denmark and Sweden voted against joining the EMU.

The Bottom Line

Many euro zone businesses haven't fully addressed tactical compliance, despite the ticking clock.

Compliance Status (by company size)



Linux Supercomputer to Be Used For Drug Research

BY TODD R. WEISS

Drug maker Vertex Pharmaceuticals Inc. has commissioned the construction of a 112-processor, 110-GFLOPS Linux supercomputer cluster that will be used to accelerate drug research and development.

In an announcement last week, Cambridge, Mass.-based Vertex said the hardware will be provided by Fremont, Calif.-based VA Linux Systems Inc. It said Worcester, Mass.-based Blackstone Technology Group Inc. will provide project management, software deployment and configuration services.

The cluster will initially use 56 computers, each running a pair of Intel Corp. 933-MHz Pentium III processors. It will be scalable to up to 450 machines running as many as 900 processors. The system will perform parallel computations using proprietary software to support Vertex research into structural biology, combinatorial chemistry, medicinal chemistry, bioinformatics and pharmacology.

Andy Fant, a Vertex senior systems engineer, said the new machine will replace a 4-year-old 45- to 50-MFLOPS system from Mountain View, Calif.-based Silicon Graphics Inc. that's approaching the end of its lease. The new system won't be fully operational for several weeks, said Fant.

The Linux system has an easy-to-use interface, said Fant. "[That's] important for our scientists, who don't want to become computer jockeys," he explained.

The exact price of the cluster isn't being disclosed, but it will cost more than $500,000, according to a spokesman.

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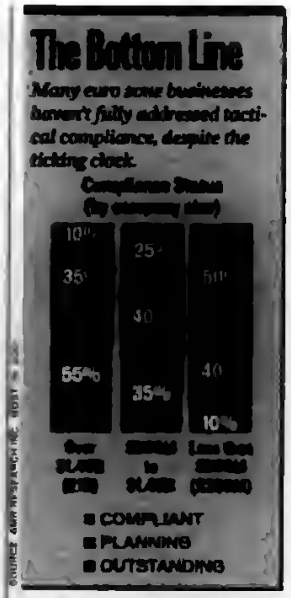

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AT A GLANCE

Arizona Educational Network

- Provides networking and computing capabilities to more than 1,200 K-12 schools, serving all 850,000 students in the state.
- Includes a multivendor contract for 45,000 PCs (one computer for every eight students) valued at $45 million.
- All schools to be equipped with a gigabit fiber to each classroom and 10M to 100M bit/sec. Ethernet to desktops is covered under a $100 million networking contract with Qwest. Schools are connected to a district office via links that range in speed from T1 (1.54M bit/sec.) to OC-48 (622M bit/sec.) under same contract.
- Broadband access to connect district offices to ASP hub. Contract award is pending.
- ASP contract with Cox Business Services, valued at $27.9 million, will provide access to more than 7,000 software titles on a 24/7 basis, ensuring that students will have access to tools at school and at home on a dial-up basis.
- The system is still in development, with three model schools online using the network and ASP. More than 200 schools are expected to be connected by year's end. All schools in the state are slated for hookup by the start of the school year in 2002.
- Partners and suppliers under the ASP contract, awarded Aug. 3, 2001, include KPMG LearningStation, an educational ASP; EnSync Corp., which handles ASP hosting; Citrix Systems, Cisco Systems, Intel, Compaq Computer and Microsoft.

Continued from page 1

ASP Deal

$8.16 per student per year. The ASP deal involves what Geiger described as a "revolutionary and unprecedented agreement" for the use of Microsoft Office by students both in school and at home on a round-the-clock basis.

Analysts agreed that the Arizona ASP deal has set some records. Neil MacDonald, an analyst at Gartner Inc. in Stamford, Conn., said the Arizona initiative "is definitely the largest [ASP contract] for Office" in terms of the number of users. He noted that the next-largest such deal he was aware of was less than one-tenth that size. MacDonald also said the agreement to allow students to use Office both at school and at home marks a change in Microsoft licensing practices. "Typically, if you want to use [Office] in two places, they want to charge you for that privilege," he said.

The sheer scale of the Arizona contract could provide a boost for the ASP industry in its attempt to penetrate corporate enterprises, said Ted Chamberlin, a Gartner analyst who follows the ASP market. "The timing of this contract could not be better" for the ASP industry, which has seen corporate clients take a cautious approach to the ASP model, he said. "This is a big deal for the ASP industry."

Craig Larson, CEO of Charlotte, N.C.-based LearningStation, which is Cox's ASP subcontractor, said Arizona schools have one of the largest ASP deals ever and the largest in the education market.

Moving to a computing model that hosts all the applications in a central location makes sense for schools, Larson said, which often don't have the technical resources or the personnel to upgrade and troubleshoot software applications locally. The model will also enable schools to cut costs by eventually deploying network appliances or thin clients, Larson said.

But hosting applications puts the burden on the network, Larson added. "We live and die by connectivity," he said, claiming that the $100 million contract that the School Facilities Board signed with Denver-based Qwest Communications International Inc. in February will ensure the kind of connections required to support the ASP setup (see box).

"This network was designed specifically for the ASP model," Larson said. "No one has ever done anything of this magnitude."

MacDonald said the high network speeds needed to ensure that students and teachers can quickly retrieve applications and files over the network could be a problem.

"It will be hard to run Office from home" over a 56K bit/sec. dial-up connection, he said.

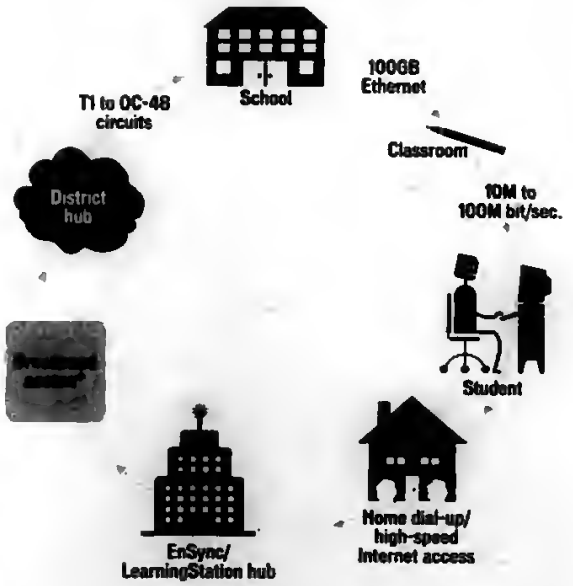
Robert Carter, a vice president at Cox Business Services in Phoenix, agreed. He said his company plans to push high-speed cable modem service to the home to provide students with the required bandwidth.

The schools' executive board director, Geiger, said he views the ASP initiative as bridging the educational divide in Arizona. When every schools is hooked up to the network at the start of the school year in 2002, Geiger said, all students in Arizona will have equal access to a wide range of educational computing tools, whether they attend classes in a Phoenix suburb "or a remote school on an Indian reservation."

The ASP deal is just one part of a crash effort to rebuild schools and upgrade their computer and communications resources resulting from a 1996 Arizona state Supreme Court ruling. The court mandated that Arizona must provide "equal" access to facilities and equipment for all students in the state, with a deadline of 1998. Following the ruling, the state took over financing of school infrastructure from local districts, funding the construction of buildings and centralized purchasing of computer resources.

Bridging the Educational Divide

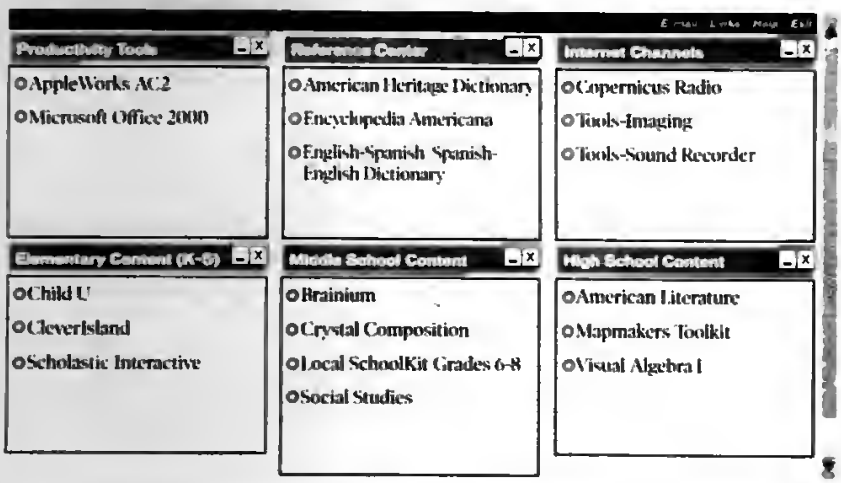
The communication setup is intended to provide every student in Arizona with equal access to educational software and productivity applications.



*Contract award pending

Arizona Education Desktop

Content highlights from the Arizona school system's desktop



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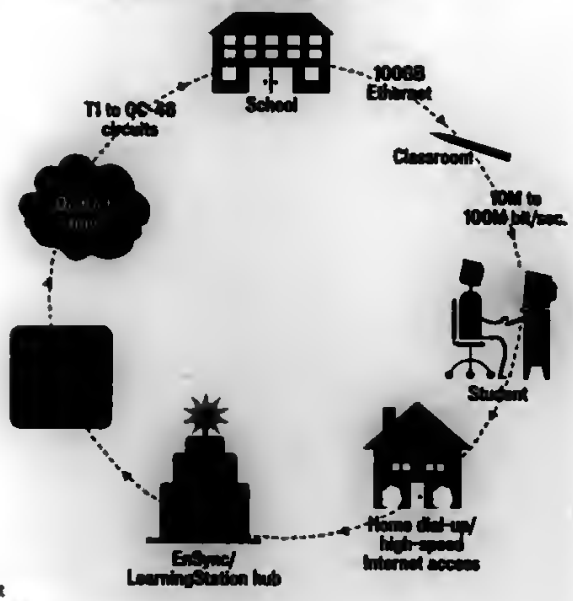

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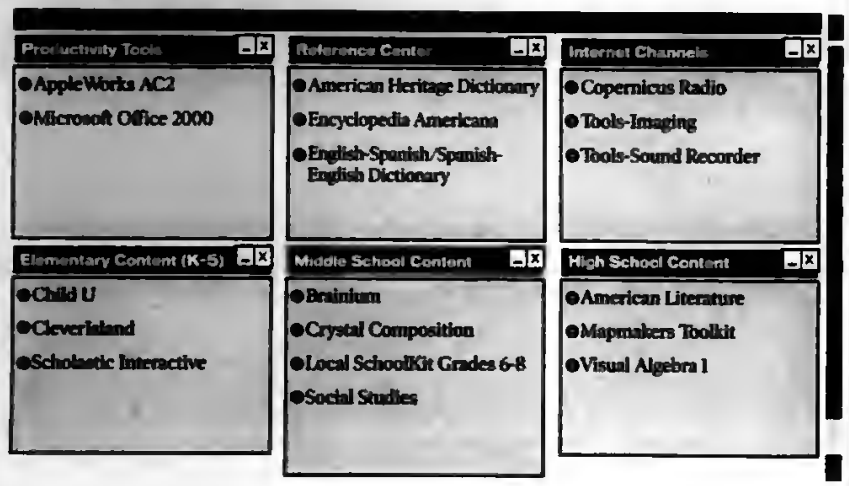

Bankrupt Montgomery Ward's Software to Be Auctioned

But some analysts are skeptical about integrating custom systems at other firms

BY TODD R. WEISS

THE BUSINESS software and other intellectual property of Montgomery Ward LLC are going on the auction block, eight months after the retailer filed for Chapter 11 bankruptcy, closed its 252 stores and liquidated its physical assets.

In an announcement last week, a partnership of three companies said they will sell Montgomery Ward's SMARTsuite integrated retail software system, as well as the former retailer's jewelry Web site and some commercial software packages, at 15% to 30% of their original costs (see chart).

Jay Lussan, a director and senior partner at Consor Intellectual Management in La Jolla, Calif., said his company and two partner firms will offer Montgomery Ward's intellectual property online to bring in cash that the bankrupt company can use to pay its debtors.

"It is a rapidly emerging trend," Lussan said of the sale of software once used by shuttered firms. "The value of enterprises is more and more in their intellectual property of all kinds."

In the past, bankrupt businesses have first tried to sell leftover merchandise, buildings, truck fleets, equipment and displays, and then dumped whatever remained, he said. Now, companies see value in the assets they spent millions to create, including software and IT systems.

Montgomery Ward has already sold its real estate, IT hardware, merchandise and other assets.

The company's SMARTsuite (for Strategic Merchandising and Retail Technology) software package, which includes store and back-office modules for merchandise management, warranty service and in-home repair, staff scheduling, auto servicing and more, could offer another company a proven package, Lussan said. Montgomery Ward had invested more than $100 million in the system.

Likewise, another business could use Montgomery Ward's former fine-jewelry Web site as an almost-turnkey system for its own online endeavors, he said. IBM built the site, using its WebSphere software.

"With some minor modifications on some screens," it could be adapted to other uses at a fraction of the original cost, Lussan said.

Working with Consor to sell the assets online are Boston-based The Website Recycling Co., which will market and sell Montgomery Ward's jewelry Web site and several retail-specific software packages, and Silver Spring, Md.-based Bid4Assets Inc.

The liquidators will offer the items through a specially created Web site that was launched last week. The sale is expected to take as long as three months.

Whether another company can use Montgomery Ward's software is uncertain, according to analysts.

Ronald Exler, an analyst at Robert Frances Group Inc. in Westport, Conn., said it "depends on how good a job they did in building the application" and making it scalable and easy to modify.

"We have seen other in-house systems go out and become commercial products," Exler said.

But Carol Baroudi, owner of Baroudi and Associates in Arlington, Mass., said she's "highly skeptical" that custom systems built for a specific company can be a good investment, because they won't come with support.

Gene Alvarez, an analyst at Pleasanton, Calif.-based Meta Group Inc., agreed that support worries might prevent the software from being a good investment.

"It's a great salvage [attempt] to try to make some money to alleviate the creditors' burdens," Alvarez said. "But from a [user] standpoint, it's caveat emptor." ▶

JUST THE FACTS

Software Fire Sale

Some of the software being sold on behalf of former retailer Montgomery Ward:

- Microsoft Corp. SQL Server 7.0 Enterprise Edition, BackOffice, NT 4.0
- Easytrieve Plus productivity language from Computer Associates International Inc.
- Focus data management applications from Information Builders Inc.
- Database products from SAS Institute Inc.

Microsoft Takes Passport To Washington For Talks

Group meets with company to discuss privacy issues

BY MATT BERGER

A Washington-based privacy group last week held the first of what will be a series of discussions with Microsoft Corp. regarding the future of the software maker's Passport authentication service.

The Center for Democracy and Technology (CDT) solicited talks with members of Microsoft's .Net developer team and its Washington legal counsel to discuss the technical details of Passport, the single sign-on service that allows subscribers to log on to a collection of Web sites without re-entering personal information. The authentication system is at the center of Microsoft's Internet plans and its set of Web services, called Hailstorm.

"Within these discussions today, we spoke about consumer privacy issues, government privacy issues, security issues and standards issues," said Ari Schwartz, a spokesman for the CDT. "All those questions were tied back to Passport and Hailstorm."

Microsoft is preparing to release its Windows XP operating system and new Internet Explorer browser in October; each will include close ties to Passport. The high-profile product debuts have drawn attention to the Passport technology.

"We're constantly involved in dialogue with these groups," said Adam Sohn, a product manager in Microsoft's .Net platform group. "We came to town today at the request of CDT. ... We had a great discussion about what we're up to."

Schwartz said the CDT hopes to establish an open dialogue with Microsoft as the vendor moves forward with future product releases. The group meets regularly with major vendors about new technologies and their effect on consumer privacy, he said.

"We've been interested in authentication issues for some time," Schwartz said. "Obviously, this is one of the most important of the authentication technologies to come around in a long time."

Joining Microsoft and the CDT last week were a number of academics working in the field of consumer privacy and technology, including Peter Swire, a visiting professor at George Washington University Law School and the chief privacy counselor for the Clinton administration.

"I've been studying the privacy and security issues that arise from Passport and Hailstorm," Swire said. "There are potentially serious issues here."

A coalition of privacy advocacy groups had filed a complaint last month with the Federal Trade Commission (FTC) regarding concerns over the way Passport gathers information about users. The meeting between Microsoft and the CDT wasn't related to the FTC filing, both parties said.

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> PETER SWIRE, GEORGE WASHINGTON UNIVERSITY LAW SCHOOL

Microsoft this month is planning to release Version 2.0 of Passport, a follow-up to the service that's already used on Microsoft Web properties such as its free e-mail service, Hotmail, and Web sites from partners such as Starbucks Corp. and Victoria's Secret. ▶

Berger writes for the IDG News Service.

You've survived the merger.
Now you've got to merge the data.
Lucky you.

Microsoft Releases XQuery Demo on Web

BY CAROL SLIWA

A developer who might need to extract only the names and addresses from a large collection of XML-based customer files filled with hundreds of fields of data can now find a demonstration model on the Web to facilitate that effort.

Microsoft Corp. earlier this month released updated Web-based and downloadable tools for XQuery, a query language and processing model that lets developers manipulate data from collections of XML documents. The tools are based on the World Wide Web Consortium's XQuery working draft, which was released on June 7.

Peter O'Kelly, an analyst at Patricia Seybold Group Inc. in Boston, said the tools are a "big proof of concept" for XQuery, which will bring "SQL-like power to XML documents."

Microsoft product manager Philip DesAutels said that although "XQuery is to XML as SQL is to relational data," XQuery is more than a query language. Developers use SQL to retrieve data from databases, but XQuery lets developers manipulate sets of XML data and combine it with other XML data or filter it, DesAutels said. "It's a processing model," he emphasized.

DesAutels said that in the absence of XQuery, a developer might use the XPath query language to locate and process items in an XML document and the Extensible Stylesheet Language Transformation engine (XSLT) to filter the information. For instance, a developer could use XPath and XSLT to retrieve a name and address from a customer file containing hundreds of fields.

But that approach works well only on a document-by-document basis, DesAutels cautioned. Taking the XPath and XSLT approach when there are hundreds of records from which to extract names and addresses would force a developer to get the information from each customer file or write a lot of code, he said.

"XPath is a way to address parts of an XML document," DesAutels said. "XQuery is about working with collections of XML documents."

With the Web-based Microsoft demo tools, a user can execute XQuery against a specific set of documents in one window and see the results in another window. The downloaded version can be used inside the current beta of Microsoft's Visual Studio .Net tool, DesAutels said.

The XQuery demo can be found at *http://131.107.228.20/xquerydemo/demo.aspx*.

"It's not like it will be showing up in mainstream applications next week, but I do think [the tools are] an important milestone," O'Kelly said.

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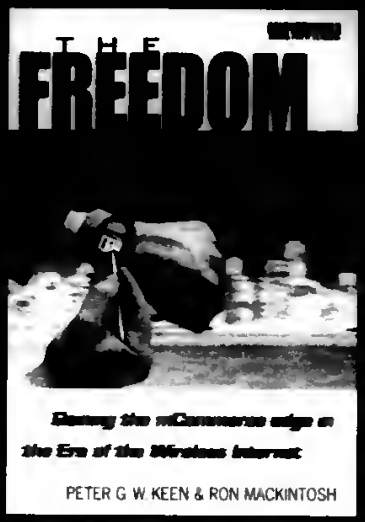

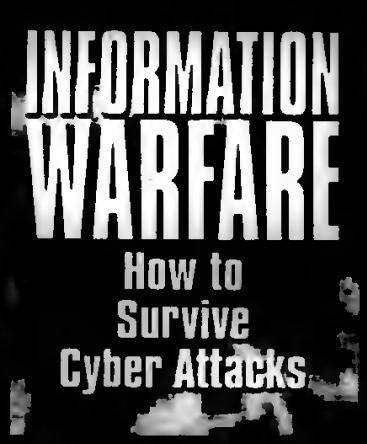

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COMPUTERWORLD

BRIEFS

Fujitsu Restructures

Fujitsu Ltd. disclosed plans last week to lay off 16,400 workers worldwide as part of an effort to restructure its entire organization. The makeover, which the company said will cost $2.5 billion, is Fujitsu's answer to deteriorating business conditions in many of its corporate units. Tokyo-based Fujitsu said its strategy is to shift its business activities toward software.

IBM, Siebel Link Apps

IBM and Siebel Systems Inc. have made San Mateo, Calif.-based Siebel's line of eBusiness software available for IBM's eServer iSeries, the companies announced last week. The Siebel eBusiness Application line was made available on OS/400 Version 4, Release 5. A launch of the Siebel software for OS/400 Version 5, Release 1, is expected within the next two months.

NextWave Gets $2.5B To Build 3G Network

London-based UBS Warburg LLC said it will provide Hawthorne, N.Y.-based NextWave Telecom Inc. with $2.5 billion in debt financing to help the carrier build a network for offering third-generation (3G) wireless services in the U.S. The funding will also be used to implement a companywide reorganization. Plans for the reorganization were filed with a New York bankruptcy court Aug. 6, NextWave officials said. A decision from the court is pending.

AOL Plans Layoffs

New York-based AOL Time Warner Inc. has announced plans to cut 1,700 jobs – 1,200 at America Online Inc. in Dulles, Va., and 500 at iPlanet E-Commerce Solutions, a software firm in Palo Alto, Calif., formed through a partnership with Sun Microsystems Inc. The moves are part of a restructuring aimed at consolidating existing online operations into new groups focusing on broadband and wireless markets.

HP Takes Security Route to Linux Arena

New software has long-awaited features

BY TODD R. WEISS

HEWLETT-Packard Co. is striving to gain a higher profile in the Linux arena by offering its own version of Linux that incorporates high-security features for business users.

The new HP Secure OS Software for Linux will offer features that have been long desired but not built into the operating system, according to Mike Balma, director of operations for Linux systems at HP.

The package, which will be released today, will sell for $3,000 per system and is based on the Linux 2.4 kernel and Red Hat Linux 7.1. The offering includes the Apache Web server, the Amanda backup utility, configuration and security auditing tools, and installation and integration support.

The operating system is targeted at Internet service providers, telecommunications companies and e-businesses that want a more secure operating system that still offers the flexibility of open-source software, according to HP.

One of the major criticisms of Linux in the past has been that it doesn't offer the higher security needed by business computing environments.

"Commercial users do require security, and that's where HP is filling in the gap," Balma said.

But Al Gillen, an analyst at IDC in Framingham, Mass., said that although there may be users who are interested in higher security for Linux, HP "may be ahead of the market" at this point. Linux is "not an inherently insecure operating system," he said.

Such a product could possibly help generate interest in Linux among users who have particular worries about security features in existing distributions of the operating system, Gillen said.

"If they have concerns, maybe this will help them decide on it," he noted.

Eric Hemmendinger, an analyst at Aberdeen Group Inc. in Boston, said the features are reminiscent of HP's Virtual-Vault security concepts, which it used in its HP-UX version of Unix. "It hasn't met with widespread acceptance in its HP-UX form; I'm not sure why it would have widespread acceptance in a Linux form," he said. "I'm not sure where this is going to take them."

Generally, customers have "not looked to operating system suppliers for security products," Hemmendinger said. "They look to companies with domain experience in security."

Security Blanket

HP's high-security Linux operating system features:

- Linux kernel 2.4 and Red Hat Linux 7.1
- Apache Web server 1.3.19
- Amanda tape backup utility
- Tripwire intrusion and file alteration detection
- OpenSSL Secure Sockets Layer toolkit 10.9.6
- Configuration and security auditing tools
- Installation and integration support

Sun Lashes Out at Microsoft For Javaless Windows XP

Rivals spar over operating system

BY LEE COPELAND

Microsoft Corp. shipped its Windows XP desktop operating system to PC manufacturers Friday, accompanied by much fanfare from the software giant and gripes from rival Sun Microsystems Inc.

The "gold" release seals Microsoft's decision to keep Java source code out of the operating system, said Toni Duboise, an analyst at ARS Inc., a market research firm in La Jolla, Calif.

Beta copies of XP and Microsoft's new browser, Internet Explorer 6.0, didn't include the Java virtual machine (JVM) that was used in Windows 2000 and Internet Explorer 5.0.

That decision prompted Sun to launch full-page ads in several national newspapers earlier this month. Those ads urged users to demand that Microsoft and PC vendors such as Compaq Computer Corp. and Dell Computer Corp. support Java.

"Sun is fully prepared to support all these customers that Microsoft is abandoning," said Bill Pataky, group product manager for fundamental Java technology at Sun. "Microsoft is making it hard; we're trying to make it easy." Consumers would prefer to have the JVM preloaded rather than download it on demand, he added.

Microsoft officials contended that a copyright infringement lawsuit filed by Sun barred Microsoft from including the JVM in Windows XP. They said it will be available on Microsoft's Web site.

Sun officials countered that Microsoft refused to license the technology without infringing upon Suo's copyrights. Sun pledged to develop a JVM that's compatible with Internet Explorer 6.0. It will be available for free download from Sun's Web site by XP's Oct. 25 ship date, Pataky said.

But that JVM won't be available in time for PC makers to include it on their PCs. A spokesman for Compaq said the Houston-based company will ship its PCs with Microsoft's version of the JVM.

Rob Enderle, an analyst at Giga Information Group Inc. in Cambridge, Mass., said that stressing the inconvenience of downloading the JVM could backfire for Sun because it could cause developers to shy away from client-side Java development.

"Instead of downplaying the difficulty of downloading the JVM, what Sun is doing is creating this huge exposure on the issue," said Enderle. "At the end of the day, most developers don't want to be in the middle of some battle. They'll use something else."

Time Line of Java Dispute

Jan. 23, 2001	April 12, 2001	Aug. 9, 2001	Aug. 24, 2001
Microsoft pays Sun $20 million to settle copyright infringement lawsuit related to Java. The settlement restricts Microsoft to Version 1.1.4 of Java.	The first beta of Windows XP lacks the Java virtual machine.	Sun places ads in national newspapers urging users to demand Java in Windows XP.	Microsoft ships Windows XP "gold code" without Java.

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MARYFRAN JOHNSON

Beyond the Gloom

OF ALL THE THINGS I MISS about the giddy heights of the New Economy, unbridled optimism is at the top of my list. That cockiness about a future of endless possibilities seems so distant nowadays, with so many people losing their jobs and fears of recession mounting.

Look at our industry in recent weeks: Fujitsu announced 16,400 layoffs; AOL Time Warner cut 1,700 jobs; consulting firm Accenture dropped 1,500 more jobs; and a bellwether publication of the dot-com days — *The Industry Standard* — shut down.

MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at maryfran_johnson@computerworld.com.

The number of job cuts across all U.S. industries this year is accelerating toward the 1 million mark, and many of you have the godawful duty of deciding which heads will roll. You're finding yourselves working longer, feeling helpless and worrying more — not just about the people you let go, but also about the survivors left behind.

Against this dreary backdrop, what can be harder to do than keep your perspective? Yet when I recently listened to a speech by author and columnist James Fallows — who made what he called a "reasoned case for optimism and hope" in the IT industry — I felt a glimmer of both. From the broader sweep of history, the cyclical surges of new technologies have always led to more volatile economic conditions. "It's natural for growth to be erratic," said Fallows.

His basic argument — and one that really does spark some optimism — is that despite the tech slump, the fundamentals of the U.S. economy are still quite robust. The unemployment rate remains less than 5%. The ruinous inflation of the early 1980s is nowhere in sight. And well-educated IT people are better positioned to find new jobs than anyone in past downturns.

So what can you do to restore some optimism and hope in your own IT group? Talk honestly and often with your troops about what you're bearing on the management grapevine. Move training and professional development opportunities to top-priority status. Identify specific projects where you can measure monthly — or better yet, weekly — successes. Then celebrate every single small victory.

There's certainly no place for giddiness today, but don't wallow in the gloom too long. There's still work to be done, and the future beckons. ◗

PIMM FOX

A Two-Pronged Approach to Web Analytics

WEB ANALYTICS is an essential part of IT strategy. Knowing who came to your site and what they did while they were there allows you to forecast traffic, making it easier to plan for growth.

The information also helps generate better combinations of online and off-line sales offers, as well as better Web site design. And analytics make it possible to do appropriate marketing by getting real information about which banner ads, online links and partnerships work.

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Unfortunately, vendors competitively position products and services and fail to recognize that the savvy IT perspective is to combine both analytics choices: ASPs with page-tagging technology and enterprise software linked into CRM applications and databases.

Most enterprise software crunches huge Web site log files at the end of the day and parses the data into reports based on customer requirements. ASPs, meanwhile, receive page data on the fly while users access the site.

Some ASPs contend that they offer a more realistic view of activity, since log files don't take into account online purchases or pages served up by proxy servers. In addition, if you have multiple servers spread around the globe, information on those servers must be collected, stitched together and analyzed, a daunting task that takes time and computing resources. Also, log files aren't able to detect network disconnects when a user clicks the Stop button, because they just record the visit, not what happens during the visit. The ASP method is also speedier because it records one view of the page, whereas enterprise software might read multiple lines of data using log files.

But enterprise software also has potential advantages. The reports can be more easily connected to existing CRM and business intelligence applications to get a more complete picture of customer behavior. And because enterprise analytics packages sit behind the firewall, secur-

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ity and reliability may be greater.

For companies with a large database of existing customers, enterprise software would be more suitable to track their online activity.

Storage of data is also a consideration. Do you want to pay an ASP to store data, or would you rather do it yourself? You must do a calculation of storage costs because as Guy Creese, research director at Aberdeen Group says, daily log files of 10GB are no longer rare, and log files are doubling in size every six months.

The decision to use an ASP vs. an enterprise package should be based on specific needs. Relevant and timely Web analytics are valuable and shouldn't be held hostage to an either/or policy. Smart companies will use both.

DAVID MOSCHELLA

Spotting the Signs Of an IT Recovery

IT MUST BE the combination of summertime and living in the aftermath of a market collapse that makes this such a tempting time to speculate about what lies ahead for the IT industry.

Scarcely a week goes by without some pundit, brokerage or research firm weighing in on our business's near-term outlook. These forecasts are usually picked up quickly by the media, which knows that people are greatly interested in whether market conditions will improve, deteriorate or just stay flat.

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For me, IT industry forecasting is a minor hobby. For 15 years, I did it for a living at IDC. During that time, I never met anyone who could consistently predict the rise and fall of various IT markets. While some of us fared better than others, we could never be really sure if this represented superior skill or merely random luck. What we *could* agree upon were some fundamental patterns in the field of IT forecasting.

If there's one mistake that's repeated so often as to be almost a running joke, it's that many forecasters assume markets will be stable in the short term but that significant change is just around the corner. In a recessionary environment, this routinely translates into statements such as, "Although the outlook for the next six months remains cloudy, the climate should improve in the second quarter of next year."

Typically, such predictions are based almost entirely upon wishful thinking. The history of the IT industry clearly shows that cycles of growth and decline usually last years, not months. For example, the IT industry in the U.S. grew dramatically from 1982 through 1984 and then went unexpectedly and almost inexplicably stagnant from 1985 to 1991. But then it boomed again from 1992 to 2000. Consequently, there's little reason to think that this year's massive declines will reverse themselves quickly.

In the past, IT forecasters have used two main tools to look for the early signs of recovery. They monitor key indicators such as the semiconductor book-to-bill ratio and distribution channel inventories, and they conduct ongoing customer-spending surveys. While this type of traditional market research remains valuable and should be part of any serious forecaster's methodology, there's good reason to believe these techniques are being superceded by new sources of real-time data.

Historically, most business IT usage was for internal applications, such as payroll, accounting and office automation. There was no easy way to observe how the overall IT market was changing, hence the need for lots of surveys. But today, most new IT spending is for external applications. These Web-based systems have the virtue of being much more directly measurable. So, increasingly, actual sales, page views, ad response rates and the like will drive the need for enhanced systems. In theory, these metrics should be much more accurate and timely than the forecasting sources of the past.

The technology industry has always been characterized by derived demand, meaning it's the things computers do that have value. With IT usage becoming more externally oriented, the drivers of market demand should become much more visible and reliable. History says the IT business won't recover for several years, but when the turnaround begins, it should be relatively easy to recognize.

READERS' LETTERS

Adding Up Assurance

MINE IS a small shop with only about 175 users, but Microsoft has structured its licensing so that you need about 250 users to effectively utilize Software Assurance ["Microsoft Explains XP Software Activation," Technology, Aug. 6]. We usually buy our PCs 10 at a whack, and contrary to what the Microsoft rep said, preinstalled Office XP *does* require activation. And since each one is now unique, we must now track serial numbers and machine numbers as well as inventory CDs and the license. My cost from Dell goes up more than $300 *per PC* if I opt for Software Assurance, and we have to install the software on each PC. Not a big deal, but it all adds up.

Steve Quiett
San Diego

Privacy Matters

IT WOULD BE funny if it weren't so sickening to bear corporations bemoaning the cost of privacy regulations ["The Politics of Privacy," Special Report, Aug. 13]. For decades, they've spent billions developing processes and technology to use information about us in ways we were never consulted on. Women who think that only their doctors, immediate family and coworkers know of their pregnancies are surprised when they get coupons in the mail for disposable diapers. How many dollars went into siphoning this out of insurance information to sell to outside firms? Corporations recognize the value of intellectual property and patents, and we can only hope that the government starts to recognize the ownership value of our lives and actions. If that costs some companies some money, it's just a drop in the bucket compared to what they've spent to abuse our privacy in the past.

Alex Torralbas
New York

Editor's Note: *Torralbas is an occasional columnist for* Computerworld.

ARABELLA Hallawell is quoted as saying, "Privacy compliance is costing the industry millions, and the public apparently doesn't care about it." I disagree. The public does care; we just don't have the time and energy to fight our way through the red tape to opt out. If the industry set the default to not share information, it would be motivated to come up with simple, innovative ways for the public to opt to share information. But I think the percentage of the public that would opt to do that would be even smaller than the percentage that has managed to opt out.

Joe Watts
Programmer/analyst
Austin, Texas

Blame MCSE Training

I AGREE wholeheartedly that the MCSE program is to blame for a lot of IT problems ["Microsoft MCSE Training Faulted," Page One, Aug. 13]. I won't let an MCSE who doesn't have at least seven years' experience touch any of my servers. But adding more training to the MCSE program will help. Let's face it: Someone who has to be told to get the various security announcements and implement any fixes shouldn't be working in an administrative position. I would also like to applaud André Mendes' letter [Aug. 13]. It's not often you find someone willing to praise the stability of anything from Microsoft. At my last admin job, my Exchange server was up 457 days.

Tony Karakashian
Network manager
Rochester Midland Corp
Rochester, N.Y.

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DAN GILLMOR

Another Court, Another Rebuke For Microsoft

MICROSOFT IS RUNNING out of judges it can irritate. That's the good news.

The bad news is that it's still difficult to see what the courts can do, short of dismembering the company, that will bring this unrepentant monopolist to account for its actions and assure genuine competition in the future. Microsoft is proving as adept at using every tactic to delay justice, and thereby deny it, as it was brutal in achieving and maintaining the monopoly that has so bothered the law.

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The latest rebuke comes from the U.S. Court of Appeals for the District of Columbia. These are the friendliest judges — in an antitrust sense, as in being pretty much anti-antitrust except in the most extreme cases — that Microsoft is ever likely to encounter.

Yet even this court unanimously agreed with Judge Thomas Penfield Jackson that Microsoft (a) was a monopoly and (b) had repeatedly abused its monopoly to thwart competition. Microsoft, which never knows when to acknowledge reality (a good quality in some cases), thereupon told the judges that they were, ahem, misinformed when they agreed with the trial judge that Microsoft wasn't automatically free to merge operating system and application code — a central issue in the case. The judges replied, effectively, "Nice try," and said they knew exactly what they were talking about.

So then Microsoft headed to the Supreme Court and asked the appeals judges not to send the case back to a new district judge — since Jackson had been appropriately tossed off the case — pending the Supreme Court's decision. The appeals judges said no again, this time in language that legal experts found pointed, and even harsh.

Why does Microsoft have such a penchant for irritating judges? One of the company's core values is showing the sheer superiority of the Microsoft way. And the tactic seems to work. The company keeps claiming that it wants a speedy resolution to the antitrust case, but the evidence is to the contrary. If the best way to justice is to stay in court forever, it's worth annoying judges, if the strategy works.

The chief aim at this point seems to be to get Windows XP out the door, a *fait accompli* that would be much harder to change later. XP is more stable than Windows 9x, but, as usual, this new operating system contains features that encroach on other companies' products and, in several cases, seem designed to "do a Netscape" to the erstwhile competition and promote Microsoft's own add-on services.

But the real key to XP is its forced march toward Microsoft's Passport authentication scheme. The privacy implications are horrendous, despite Microsoft's assurances and backpedaling to mollify privacy advocates, who remain deeply — and rightfully — worried.

Passport, the only permitted authentication method for any Web services provider that wants to use the .Net infrastructure, is an incredible leap forward for the monopolist. It's all about creating tollbooths on the future of online commerce. Do business, pay Microsoft a cut.

Courtroom rebukes are just part of Microsoft's game. Barring a meaningful settlement, Microsoft will keep all kinds of judges busy for years to come.

MICHAEL GARTENBERG

BlackBerry Can Be Useful, But It Has Its Drawbacks

TWO-WAY PAGERS have been around for years. The problem with the earliest pagers was that instead of working with your existing e-mail, they added yet another queue that required checking.

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Then came the BlackBerry from Research In Motion Ltd. Available in pager and PDA forms and able to connect to both Microsoft Exchange and POP3 servers, the BlackBerry started a revolution. As the first device to provide users with access to their existing e-mail accounts combined with "always-on" connectivity, BlackBerry was an instant hit with financial analysts, venture capital types and other road warriors.

E-mail remains the killer mobile application, and many users are questioning whether they can liberate themselves from the bulky laptops they carry in favor of BlackBerry devices. The answer will be yes, but there are some caveats; this approach isn't right for everyone and can potentially lower productivity. So although the BlackBerry can be very useful, it also has drawbacks.

The key to the BlackBerry's usefulness is allowing users to stay in touch when they're on the go or in places where a laptop is too cumbersome to use, or to sift e-mail as it arrives to enable greater efficiency for later desktop-based sessions.

For many users, e-mail has become the primary communication vehicle, and the argument for using a BlackBerry device instead of a notebook revolves around the fact that a large population of mobile users does nothing more with a notebook than use it for e-mail. The problem is that even if the bulk of your users' work on the road involves reading e-mail, some issues must be worked out.

One is that although the BlackBerry handles text e-mail with aplomb, it doesn't have any built-in support for the attachments that have become a major component of e-mail life. To overcome this — and make your mobile users' lives easier — you'll need to add services from your wireless Internet service provider to your BlackBerry, such as the Mobile Office offering from GoAmerica Communications Corp. This add-on to the basic BlackBerry allows users to work with attachments they receive, as well as to send their personal files directly from their devices and to work with embedded links to Web-based content.

Other potential problems that are more difficult to overcome are proprietary embedded data types for forms or content that can require HTML or rich text format. But the most critical e-mail content remains text-based, so those hurdles shouldn't pose major technical challenges.

There are a few other caveats that don't have to do with technology. The first is the changed set of expectations that occurs with heavily addicted BlackBerry users. As they begin to respond to e-mail more frequently and with faster response times, users will increase the volume of their e-mail and feel greater pressure to respond quickly. The second caveat is that by losing time for reflective thought prior to responding, the number of poorly composed messages will likely increase.

Combined with the small keyboards that are built into the units, typos also increase, and terse, more impersonal messages will occur more often. (You can always tell when you get a message from a BlackBerry user; it's either "yes," "no" or misspelled.)

BlackBerry devices have emerged into the enterprise like the old Trojan horse. Promising the allure of better e-mail management, they can actually create more work for users while lowering productivity. So, like the recipients of the original Trojan horse, IT departments should remember to "beware of geeks bearing gifts."

BUSINESS

THIS WEEK

PETER HENDRIE

WAKING UP TO PRIVACY DEMANDS

Firms that have been lax about privacy have received little more than a slap on the wrist from regulators. But with more than 50 privacy-related bills wending their way through Congress, executives like DoubleClick's Jules Polonetsky (above) are going to have to pay a lot more attention to their liability. PAGE 36

BRIGHT SIDE OF LAYOFFS

Getting laid off often comes as a blow, especially to IT employees who have enjoyed a wide-open labor market for the past few years. But layoffs *can* have a silver lining. Wise IT workers use them as opportunities to reassess the directions of their careers and to seek out jobs with more stability and rewards. PAGE 32

BUILDING FOR THE WEB

In the highly competitive pharmacy benefits management arena, industry leader AdvancePCS is leveraging both its size and its merger-related systems-integration challenges to maintain its market position. PAGE 38

JIM CHAMPY

Focus on Tomorrow

IT'S NOT UNCOMMON FOR IT organizations to feel understaffed and overburdened. That's especially true today, as economic pressures lead to some heavy corporate downsizing. But even when a company downsizes, its work doesn't go away. So IT professionals are feeling the pressure.

But while they may feel pressure, most IT organizations are lost in the drone of legacy systems, the din of dot-com collapses and the creaking of technology infrastructures. There's no real leadership on the technology side about what to do next with IT. Most IT managers aren't sufficiently focused on the future.

On the business side, managers don't have the appetite to step up to the next round of investment that's required to leverage the Internet's full power. They listen politely as major software vendors promise to deliver savings with the next release but choke on the prospect of once again spending millions and getting little in return. Managers also remain confused about the real effect the Internet will have on how business gets done.

One manager recently told me that he no longer believes the assertion that "it isn't the big that will eat the small, but the fast that will eat the slow." He said he's now telling his people that "the second mouse gets the cheese," so his company won't be aggressive with technology. The broad slowdown of technology markets also reflects the fact that most companies' IT engines are idling.

At a recent meeting of investment analysts who cover the information services industry, I was asked what it will take to get IT spending going again. What is the big move companies will make to wake up the market?

My answer is that I'm optimistic about IT and what it will do to transform business. The next big move is sitting right in front of IT and business managers and will become clear if you read the following three questions and answers. Recognize, however, that getting the IT engine going isn't just about spending on technology. It's about first considering the business changes that IT now enables.

1. What's the transformational technology that will enable radical business change?

It's still the Internet. Managers just have to see beyond the collapse of poorly conceived and executed Internet businesses. Never before has IT been so ubiquitous and cheap. The Net is the network that will enable companies to redo their processes and, in concert with other companies, reach new levels of business performance. Most corporate inefficiencies lie in the work that's done between companies — the reorders, misbillings and redundant work that occurs because intercompany processes aren't aligned. The Internet is the technology that will allow you to fix these problems.

2. What business advantage is there to gain?

IT, when combined with new process designs, will deliver both extraordinary efficiency for companies and new value propositions for customers. Investors may be pummeling Cisco's stock, but they recognize that this company has built a set of compelling business processes and practices enabled by the Internet. You must look for both cost-reduction and value-creation opportunities, just as Cisco has done.

3. What will it take to get to the next level of business performance?

You must begin to reconsider all of your processes, but this time, not just within the walls of your company. You must also look at the processes of customers and suppliers. Think information-rich customer relationship management and supercharged supply chains.

Jim Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. He can be reached at [illegible]

The days of the Internet are just beginning. The next round of business performance enhancement is at hand. What's required is aspiration, combined with time, money and a lot of persistence. It's time for IT to get going again, but now the future is both within companies and beyond their walls.

WHY WAIT FOR THE WORST TO HAPPEN BEFORE YOU GET THE STRONGEST WEB

SECURITY SOLUTION?

RSA

SEC R T

JOB HOPEFULS gather at a monthly New York pink-slip party: Jeff Silverman (above left) and Kinwar Arora (above right); recruiter Alissa Vmansky and Zachary Nelson (below right).

JOHN RAE

The A-to-Z guide to attending your first pink-slip party. By Julekha Dash

Pink-Slip Party Etique

ON A WARM summer evening in Manhattan, hundreds of former dot-com workers are huddled inside Hush, a dimly lit bar in the city's Chelsea district. The occasion is a pink-slip party, held here on the last Wednesday of every month for hopeful laid-off workers and recruiters from Silicon Alley.

At first glance, the event resembles any other New York bar scene: mostly single twenty- and thirtysomethings drinking $3 tequilas and Bud Lights and listening to house music while eyeing prospective dates.

But upon closer inspection, you see that the partygoers, such as Zachary Nelson, who graduated from Columbia Business School last year, wear color-coded glow-in-the-dark wristbands: Pink means you've been laid off, green signifies that you're an employer or recruiter, and blue means you're just here for the ride.

At one end of the room stands a message board, where job hunters like Nelson, who was laid off from his job as an

Internet strategist at a New York-based consulting firm in April, can peruse job listings and post their résumés. At the other end, some recruiters sit at tables to chat about openings at their companies, while others mingle.

As layoffs at start-ups and corporations alike have escalated, pink-slip parties have gained popularity as a way for jobless workers to not only network but also to find a community of individuals who are facing the same struggles.

"Knowing other people in the same boat makes me feel better," says Nelson. In addition to New York, cities such as San Francisco and Chicago hold pink-slip events, typically once a month.

In recent months, the New York parties have drawn anywhere from 700 to 1,000 attendees per event, says Allison Hemming, who runs New York-based consulting firm The Hired Guns Inc. Her company promotes the events both online, at *www.thehiredguns.com*, as well as in an electronic newsletter job hunters can subscribe to at the site.

Though the events typically draw recruiters and job seekers hailing from New York's Silicon Alley, anyone can attend — even those who are neither job hunting nor offering employment. Most attendees dress business casual — women wear a blouse and nice slacks or a skirt, while men wear trousers with a collared shirt. Few don more formal attire, such as jackets and ties, like one might wear to a job fair.

Getting the most out of your first pink-slip party requires a mixture of cocktail etiquette, basic job-hunting skills and New Economy smarts, according to attendees. Arrive early, at around 7 p.m., when the event starts, advises Hemming, because most recruiters don't stay beyond 9 p.m.

Derek Brightman, vice president of technical services at Infinity Consulting Group in New York, has attended about a dozen pink-slip parties. He recommends bringing a résumé or at least a business card with your contact information.

Even if you're unemployed, you should carry a business card with your phone number and e-mail address, says Eileen Shulock, who was an e-commerce strategist at New York-based Internet consulting firm Knowledge Strategies Inc. until May, when she was laid off. (Some companies, such as Waltham, Mass.-based VistaPrint.com Inc., offer free business cards.)

Brightman also advises partygoers to try to stand out and make a connection when talking to a recruiter. After meeting 20 to 30 people in one evening, the conversations "tend to blur together," he says. For example, one jobless worker told Brightman that he looked like actor Lou Gossett Jr. "I'll remember this guy for life," he says with a laugh. Another candidate talked about her interest in music, which allowed Brightman to get to know her better as a person rather than focus on just her professional skills and interests.

Since pink-slip parties are essentially cocktail parties and therefore not as formal as job fairs, it's OK for job hunters to do something unusual to get noticed, says Hemming. "Wear or carry something that visually says what you do, like a sign that says 'No. 1 Java Programmer in America,' " she says.

Keren Solomon says that when she attends a networking event like a pink-slip party, she sets a goal of talking to at least three people in the room during the course of the evening. Solomon was laid off in March from her job as a project manager at Event Zero Inc., a Boston-based consulting firm, where she had worked for a year. Like many former start-up employees, the 33-year-old retains a sense of ownership regarding her former employer, often referring to it as "my company."

After attending local networking events such as the New York-based Five O'Clock Club, which provides career counseling, Solomon learned to practice spending one minute talking about herself. "Describe who you are and what you do [succinctly], as opposed to [spending] a half hour to say what you do," she says. "Find a short, pithy way to describe yourself, and let people move on."

"You can't monopolize someone's time," says Shulock, who volunteers her services as director of the New York chapter of WebGrrls International, a networking group for women in technology. "If someone wants to move along, it's not because something didn't connect."

Party Favors

10 ways to make the most out of your first pink-slip event

1. **Arrive early.** The party starts on time at 7 p.m. Recruiters are usually finished with their efforts by 9 p.m. (which is when the real party begins)

2. **Circulate.** Don't just talk to your buddies or monopolize someone's time. Have a goal of meeting a certain number of people

3. **Bring a résumé or business card.** Include your e-mail address and phone number so recruiters can contact you

4. **Wait your turn.** Don't interrupt conversations between recruiters and other job hunters

5. **Don't talk only to recruiters.** Other job hunters may provide good leads or simply help provide a sense of community

6. **Look for any names you may recognize.** Call ahead to see if there are any companies attending with which you've had previous contact

7. **Make sure it's a give-and-take.** Offer any help, such as contacts or names of networking organizations, to fellow job hunters

8. **Devise a pitch.** Come up with a brief way to describe your work experience and skills to recruiters.

9. **Stand out.** Find a way to really make an impression on recruiters.

10. **Remain positive.** Don't get down on yourself because you're out of work.

Another pink-slip etiquette tip: Wait until a recruiter wraps up a conversation with another candidate before introducing yourself. "You may want to talk to as many people with green bracelets in the room [as possible], but it's important to relax and wait your turn," says Hemming.

And don't talk only to recruiters — talk to other job seekers as well. "You never know who you're talking to and who they know," says Steve Eisenberg, who was laid off in February from his job at a large media conglomerate, where he was responsible for project management and business development for online operations.

Like many other pink-slipped workers, Eisenberg says he's nervous about job-hunting in a shaky economy, noting that he has only three months of unemployment benefits left. Meanwhile, he's trying to get some technology training offered by the state of New York and is seeking both short-term freelance work and a full-time job.

To prepare for a networking event, Eisenberg says, he calls ahead to see which companies will be in attendance. Nelson says it's also good to look out for any companies at which you may already have contacts.

"It helps if you have a network in place [at the hiring company] if you do come across somebody in human resources," Nelson says. For example, he recognized the name of one company that sent employees to recruit at the May pink-slip party, because he used to work with the firm's founder. As a result, Nelson later sent an e-mail to the founder, which paved the way for further discussions about job openings at the company.

Job hunters say that in addition to finding job leads, they try to help out other pink-slip partygoers. Even if you're unemployed, you still "have a network of people relevant to somebody else," says Nelson.

For example, if Nelson was to meet somebody interested in working for nonprofits, he would offer contacts because he used to work in that field, he says.

Finally, as you try to find leads for yourself, remain optimistic, Nelson advises. "Don't get down on yourself about the fact that you're in a position of needing something from other people. One bad experience doesn't negate all the good decisions" you've made, he says.

Dash is a technology writer in Charlottesville, Va.

Not S

Pretty in P

Pink slips are catching many IT professionals off guard this year. The smart ones will learn how to prevent it from happening again. By Joanie Wexler

THE WAVES OF TECHNOLOGY layoffs this year have blindsided many IT professionals. After all, technologists have been enjoying a lucrative buyer's market these past few years.

But the current economic downturn can actually present opportunities for workers on the receiving end of a pink slip or for those fearing the imminent arrival of one. The tightened job market will force many to take stock of their job priorities and lifestyles to ensure that their next situation is as rewarding as their current one — if not more so.

Like the investment community, some IT job seekers are returning to more traditional values and priorities. Job security is becoming a bigger deciding factor, and workers are becoming more fastidious about their due diligence on potential employers.

Getting behind a company's financials, for example, enables job seekers to consider the amount of available cash to determine approximately how long it will allow the company to continue operating. This is a particularly valuable exercise when the potential employer isn't a household name.

Kordell Alexander, for example, was working for

an IT contracting firm as a technical support specialist when he was laid off. His client, Internet access provider LaserLink.net in Media, Pa., was purchased by Santa Clara, Calif.-based Covad Communications Group Inc. in March last year.

"The conversions [between the companies] didn't work well, the stock plummeted, and I was laid off in April 2001," explains Alexander, who was just a year out of college.

His employer, the contracting firm, is seeking a new gig for Alexander, but at the time of his *Computerworld* interview, it hadn't come up with anything. Since LaserLink paid him by the hour rather than on a salaried basis, Alexander wasn't eligible to receive a severance package.

This all came as a jolt to Alexander. He says he had heard all about how wide open the IT field was, so stability didn't figure heavily in making his list of priorities for his first job. But that has since changed.

"Job security is No. 1 for me right now — I want to know how stable the company is," says Alexander, who has just begun paying off a decade's worth of school loans. "I'll take a look at its financials, history and growth and see if it is on an up-slope."

Alexander says his primary job-hunting tool is the Internet and that he's spent countless hours at various online job boards.

It Pays to Be Choosy

Software engineer Marty Akerman is probably one of the few IT workers who has been laid off twice within a span of two years — by the same company. After working for now-defunct financial application developer Sequel Business Solutions in Seattle from 1997 to 1999, Akerman received a pink slip when the company streamlined its operations and workforce.

From there, he went to work for an extranet services provider. Several months later, he had the opportunity to return to Sequel, a work environment he had thoroughly enjoyed, and he took it. But, alas, a few months later, Akerman again found himself a Sequel layoff victim.

Part of the reason he returned to Sequel was because the company had been a better personal fit for him than the other job, Akerman says. But if he had paid closer attention while job-hunting after the first Sequel layoff, he might have found a position that better suited him, and he might not have had to face the same situation again, he says.

In hindsight, Akerman says that he possibly took the job with the extranet services provider too quickly. The company had given him a one-week deadline to accept its job offer, he says, and he felt pressured to act.

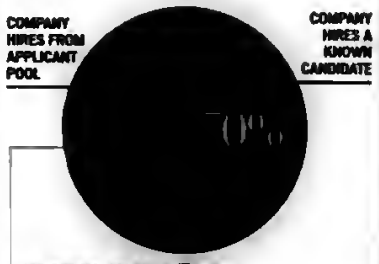
"If I had it to do differently, I might not have felt compelled to comply with that one-week limit," Akerman says. "If you get such a deadline but don't feel you are ready to make the decision yet, my advice would be not to jump."

On the other hand, Akerman says job security isn't one of his biggest worries and he's of the mind that he'll always be able to find work. Rather, Akerman — now a senior software engineer at telecommunications software maker GoAhead Software Inc. in Bellevue, Wash. — is more concerned with finding a mix of the familiar and the new, in terms of projects and technology. And, he says, he tries to determine the amount of structure in the IT department and the organization as a whole.

"Everyone's comfort level is different," Akerman says. "For me, it's a balance of not being overly rigid but having enough structure that the department and the company know what they want to accomplish."

Avenues to Employment

If you're going for the highest probability of a paycheck, turn to your network of contacts, because most hiring managers bring on individuals they already know. Creating a position to match an IT candidate's unique skill set is the least-common hiring method, but it usually yields the most rewarding results, says Lee Hecht Harrison's Barbara Barra.



SOURCE: LEE HECHT HARRISON INC., NEW YORK

The Consulting Route

When it comes to variety, consulting — either for a professional services firm or as an independent contractor — is often a strong option. After being laid off from a full-time job, many find that a consulting gig is the fastest route back to work.

When it comes to working for a professional services firm, the projects are varied, and salaries are comparable to those offered by traditional corporations, says John Challenger, CEO at Challenger, Gray and Christmas Inc., an outplacement firm in Chicago.

But there are a few caveats, Challenger warns. "The pace and travel can be very demanding over the long haul," he says. "This is where the lifestyle consideration comes in. Do you like going from project to project and living largely on the road?"

Being a self-employed IT consultant is risky, Challenger adds. "Long term, it means selling new projects. For many IT professionals, sales is not what they are good at," he says.

Alexander, for one, doesn't intend to go the consulting route anytime soon. "Contracting has left a bitter taste in my mouth," he says.

Self-marketing Requirements

Recruiters emphasize that it's important to approach a job search like any other business project. "Market yourself like a product," advises Terry Gallagher, president of Battalia Winston International, an executive search firm in New York. "Identify the needs of each potential employer, and then sell yourself against those needs. Give recent vignettes of experiences you've had that match those requirements."

Another recruiter suggests using a "project management mind-set." Barbara Barra, executive vice president at Lee Hecht Harrison Inc., a New York-based career counseling firm, says it's important to create a plan with defensible steps and milestones as you would in the work world, including the following:

- Determine your professional objective.
- Identify your target market.
- Gather marketplace information.
- Get the message out.
- Follow up.

Job candidates generally have 20 to 30 conversations with hiring managers before a job offer is made and accepted, Barra says. She recommends having 30 search-related conversations each week and for two of those to be with hiring managers. "Follow up with the hiring managers every two weeks," she advises.

Gallagher suggests that IT job-seekers create a decision grid. On one side, list your priorities in order, from most important to least important. These could include advancing from IT to executive management, financial security of the company, alignment of IT with the business and so forth. Give each a corresponding priority value of, say, 1 to 10, with 10 being the most important. On the right side, as offers come in, rate potential employers on each factor and then add up each company's score.

"Most people just use their gut" when deciding whether to take a job, says Gallagher. "But this system also gives you some quantitative measure of where you should go."

Wexler is a freelance writer in Campbell, Calif.

Microsoft Project 2000

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PRIVACY: THE LIAB

Regulators typically go after privacy violators under unfair and deceptive business practices laws, but does that give companies an impetus for not posting privacy policies to limit their liability? By Deborah Radcliff

CONSUMER INFORMATION is currency. And businesses that collect, mint and trade this information have done so thus far with relative impunity.

"The key to privacy protection is enforcement. Right now, there's no financial harm for not having or following a privacy policy," says Andrew Shen, an analyst at the Electronic Privacy Information Center, a privacy and free-speech advocacy firm in Washington.

Starting in 1998 with the GeoCities case in whicb the company was charged with violating its own privacy policy by sharing customer data, companies investigated for surreptitiously collecting personal information and reselling it to third-party marketers have received little more tban federal chastisements warning them to clean up their acts. Credit card files stolen from merchant databases have yielded no charges for faulty security. And spam is still everywhere.

But the bar on enforcement, and hence liability, may soon rise. There are more than 50 bills in Congress that deal with privacy (*www.epic.org/privacy/bill_track.html*). Some pieces of legislation, like the Health Insurance Portability and Accountability Act (HIPAA), include fines for failure to comply and even harsher fines for certain offenses, like profiting from harvested medical information.

For the most part, regulators go after privacy violators under laws governing unfair and deceptive business practices. But one can argue that this also creates an impetus for businesses to avoid posting privacy statements to limit their liability.

"That is an irony that's been pointed out to us many times," says Jessica Rich, assistant director of the bureau of consumer protection at the Federal Trade Commission (FTC). "There's really no formal liability unless you violate a statute such as fair credit reporting or the Children's Online Privacy Protection Act."

But bills have been passed to force the medical and financial industries to post and follow privacy statements [Special Report: Government, Aug. 13]. Meanwhile, ethical businesses are posting privacy statements voluntarily, says Rich, because customers demand them. And failure to voluntarily protect consumer privacy could result in a black eye on the company's image.

Two years ago, Wallingford, Conn.-based CD Universe learned this lesson the hard way, when thousands of its customers' credit card numbers were stolen and posted on the Web, nearly putting the company out of business.

It's also bad news when a business finds its anme in tbe beadlines of *The Washington Post* for a privacy gaffe, the way pharmaceutical maker Eli Lilly and Co. did in July after accidentally revealing e-mail addresses in a mass mailing to bundreds of patients suffering from depression, bulimia and compulsive disorders. That slip-up incited the American Civil Liberties Union to ask the FTC to investigate the Indianapolis-based pharmaceutical giant.

Still, there's an argument that a company's privacy policy can also limit its liability.

DoubleClick Inc., an online profiler in New York, initiated a merger two years ago with an information aggregator, Abacas Direct Inc., and announced its intent to link their respective databases. After an investigation, tbe FTC last montb decided not to file any charges because DoubleClick had acted in accordance with its own privacy policy by giving members advance notice and a chance to opt out.

Nevertheless, the incident prompted DoubleClick to hire New York's former consumer affairs commissioner, Jules Polonetsky, as its chief privacy officer in March last year. He quickly brought six other privacy experts on board to

establish and carry out best practices.

One expert, a former consumer affairs judge from New York, reviews prospective customers' privacy policies before permitting them access to DoubleClick data. And 50 clients who have violated their privacy agreements with DoubleClick have since been dropped.

Weak in the Knees

While enforcement pushed DoubleClick to get its privacy house in order, legislative enforcement may be ineffective for several reasons, say experts:

1. Recently passed legislation is light on penalties. Of the approximately 50 bills circulating through Congress, most of the new and pending legislation, with the exceptioo of HIPAA, lacks teetb for financial or criminal punishment.

2. The worst offenders don't obey laws anyway. "People using harvesting tools to take e-mail addresses off bulletin boards, chat rooms and eBay, and spoofing their IP addresses and mail headers, aren't going to follow legislation," says Polonetsky. "The challenge is to give government tools to take action against bad characters without creating a whole new world of lawsuits and liability for businesses that send e-mail to their opt-in customers."

3. How do you define privacy? "Privacy is a difficult notioo to pin down. And even if consumers agreed to a privacy policy two years ago, is it still valid today?" says Paul Buta, vice president and co-founder of Optas Inc., a direct-marketing software developer for the pharmaceutical industry in Wakefield, Mass.

4. How much privacy do consumers want? Web site operators like James Hong, CEO of the vanity site HotorNot.com, says it's difficult to convince HotorNot's 670,000 members to take privacy seriously.

"People are writing oewsletters and Web logs, and there's a craze to write entire journals on the Web for others to see," Hong says. "This is a buge phenomena on the Web right now."

Nevertheless, according to an August 2000 report by the Pew Internet & American Life Project, a Washington-based nonprofit research center, 84% of 2,117 Americans surveyed say they're coocerned about busioesses or people they don't know gaining access to their personal information. And 94% of the respondeots say they want to see violators punished — 11% say they want to see violators go to prison, and 27% say violators should be fined.

This combination of public outrage and increased regulation will lead to a rise in civil liability, contends Larry Ponemon, CEO of PrivacyRight Inc. in San Mateo, Calif.

Already, some states are aggressively going after privacy violators. For example, Minnesota Attorney General Mike Hatcb has filed suit against Fleet Mortgage, an affiliate of FleetBoston Financial Corp., for consumer fraud, deceptive trade practices and federal telemarketing sales rules violations.

The suit contends that Fleet shared its customers' mortgage account numbers with telemarketers wbo deceptively marketed membership programs under false advertising. In July, a circuit court judge rejected Fleet's bid to have the case thrown out.

The Gramm-Leach-Bliley Act, an overhaul of the Depression-era barriers that once separated the insurance, banking and brokerage industries, will also force financial services institutions to take their customers' privacy data more seriously. According to Pooemon, the finance industry faces a record 95% audit rate by the Federal Deposit and Insurance Corp. from July 2001 to June 31, 2002.

Ponemon, who previously formed the privacy practice at PricewaterhouseCoopers, says the audit rate to support new legislation typically runs closer to 5% to 7%.

"In the history of regulation, there's never been such wide-scale audits. Regulators know [financial privacy] is a massive problem. And once a regulator says there's a defect in your compliance practice, that opens a Pandora's box for class-action litigators who can take you to task on tort laws," says Ponemon. "That's where the rubber meets the road."

ILITY LINK

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DOUBLECLICK hired New York's former consumer affairs commissioner, Jules Polonetsky, to serve as its chief privacy officer to determine privacy best practices after an FTC investigation of a proposed merger.

ILITY LINK

Scaling Up FOR THE Web

Pharmacy benefits management leader AdvancePCS is working through merger-integration challenges to deliver a slew of Web-based services. By John Webster

IN THE HOTLY CONTESTED pharmacy benefits management (PBM) market, size decidedly matters.

That's why Advance Paradigm Inc. last year acquired PCS Health Systems Inc. for $675 million and another several million dollars in stock to create AdvancePCS, making it the nation's largest pharmacy benefits manager, with 4,500 employees and 75 million members. This year, AdvancePCS is expected to manage 600 millioo prescription transactions, worth $21 billion.

The bigger a PBM, the more clout it has with the drug manufacturers that supply its products and the health insurers that make up its client base. But to operate effectively, a PBM needs the IT resources to not only process benefits claims quickly, but also to deliver useful Internet-based services to members and business partners, according to analysts.

"Claims processing is a low-margin business, and you need scale to be profitable," says Ken Miller, an analyst at J.P. Morgan H&Q in San Francisco.

Internet-based services, which depend upon a firm's ability to aggregate large amounts of data, are expected to become essential for PBMs to remain competitive, and AdvancePCS plans to make them a key part of its business strategy.

"This will let us not only save money, but generate revenue," says Jon Halbert, vice chairman of e-business and technology at the Irving, Texas-based company.

Easy-to-access health care information will become increasingly important in helping PBMs woo clients such as big health insurers and pharmaceutical giants, says Tom Gallucci, a health care analyst at New York-based Merrill Lynch & Co.

"PBMs have to ask themselves, What can we do with the information we have in order to offer value to our clients? And the Internet lets them offer more value-added services such as disease management," says Gallucci.

For example, browser-based access to aggregated patient data, drug information and laboratory test results would allow a health maintenance organizatioo to see how effectively certain drugs are working for a health plan member, he says.

Although such value-added services could become key differentiators among PBMs, they aren't significantly enhancing the bottom line — at least not yet. Nonetheless, AdvancePCS is trying to leverage the Internet to its advantage and help it win new business, adds Miller.

But Web-based services aren't going to be unique for long, as AdvancePCS's competitors, such as Merck-Medco Managed Care LLC in Franklin Lakes,

AT A GLANCE

AdvancePCS

- Company: AdvancePCS, formed by the October 2000 merger of Advance Paradigm Inc. and PCS Health Systems Inc.
- Headquarters: Irving, Texas
- Employees: 4,500
- Description: AdvancePCS manages outpatient pharmacy benefits for health insurance providers.
- Fiscal 2001 Financials
  Fourth quarter ended March 31
  Revenue: $7 billion
  Earnings: $149.6 million
  (excluding merger costs and $91.1 million in nonrecurring charges related to the acquisition of PCS Health Systems)

N.J., and Express Scripts Inc. in Maryland Heights, N.J., begin to offer similar services to health care clients, says Mike Davis, a vice president at Stamford, Conn.-based Gartner Inc.

"These services are a business requirement now if you're going to stay competitive, and I don't see anyone doing anything particularly novel out there," including AdvancePCS, says Davis.

"Every PBM is trying to corner the market on this because the drug manufacturers pay big bucks for this kind of information," he adds.

But the PBMs aren't just competing against one another; they're also up against large pharmaceutical data clearinghouses such as IMS Health Inc. in Westport, Conn., and Quintiles Transnational Corp. in Durham, N.C., which provide drug manufacturers with an array of patient and drug data, Davis explains.

After the merger of Advance Paradigm and PCS Health's systems was completed last October, the first task for AdvancePCS's IT department was to create a consolidated data center that could be accessed by its 55,000 pharmacy customers and clients, such as Great-West Life & Annuity Insurance Co. in Greenwood Village, Colo., and The Principal Financial Group in Des Moines, Iowa, through secured extranets via browser-based systems.

The trick, says Halbert, was to give in-house service representatives and health care clients a combination of analysis tools they could use to access a mix of data repositories.

As a result, a combination of servers from IBM and Tandem Computers Inc. now handles claims processing for retail pharmacies, while AdvancePCS's mail-order processing center houses servers from Sun Microsystems Inc. and IBM. The company's collection of databases includes Oracle 8i, IBM DB/2 and Sybase.

The disparate platforms and operating environments — as well as different interpretations of the same or similar data by each organization's systems — caused one of the biggest snags during the merger and integration, says Julie Hall, chief technical officer at AdancePCS.

The IT teams of Advance Paradigm and PCS Health Systems came together with a very different combination of technology skills, and initial design sessions were often "us vs. them" conversations, recalls Hall.

By turning to agreed-upon industry-standard development architectures — such as Sun's Java 2 Enterprise Edition (J2EE) framework, shared-service components to bridge core systems and a common, enterprisewide data model — the combined, 1,300-person IT staff was able to help AdvancePCS make technological and business process improvements, Hall says.

Merger Opportunities

During the integration effort, the company turned what's arguably the biggest challenge faced by a postmerger management team — the seamless combination of the IT infrastructures of two large organizations — into an opportunity to develop and deploy new software that simplifies and accelerates the way it provides Internet-based services.

To tie together the dual systems, Halbert's staff created a middle-tier software environment based on J2EE's component architecture specification. Each component, written in C++ or Java, represents a business process such as prescription adjudication. Homegrown XML tools link the components to the Internet.

The middleware provides a consistent view to data, regardless of where it resides in the company, says Hall. Throughout the postmerger integration process, the middle tier "has been instrumental in allowing us to quickly leverage disparate processes and data sets with minimal development effort," says Hall. AdvancePCS uses XML as a common way to receive data and complete transactions, "as we always did," she adds.

Any application — including call center software, interactive voice-response systems and data analysis tools used by payers — can now be linked to the middle tier. In the past, the two companies wrote interfaces to the various back-end databases, says Halbert.

With J2EE, AdvancePCS programmers now write the interface once to a set of systems, present data in real time and allow users "to slice it in ways they've never been able to before," he says.

By using XML-based middleware instead of rewriting code directly to back-end systems, Hall estimates, her firm shaved six months off the development time required for integrating its Web-based activities. In addition, the middle tier has created a virtual bridge to back-end systems, which prevents service disruptions to members.

For example, AdvancePCS's IT group had just two months to create a bridge to support common operations, including an approach for handling mail-order prescription refills. Since then, refill processing has been migrated to a common system without affecting users or operations, says Hall.

"It was a virtually invisible transition to the enterprise, and we retired the redundant system months ahead of the original one-year transition plan," she adds.

Combining Web-based services and consolidating data centers are important achievements for AdvancePCS, but the postmerger integration process is far from over. Until recently, the company still had two different back-end systems that adjudicated pharmacy claims and Web servers in two different locations, for example.

Still, a history of strong management should help the new company bridge those gaps and expand its industry lead, according to analysts. ◗

Webster is a freelance writer in Providence, R.I. Contact him at johnwebster1@earthlink.net.

WORKSTYLES

New Pig Keeps Its Web Site Clean

Mission-critical systems: "Our [enterprise resource planning] system, Trend, a purchased system that we've customized to meet the needs of direct marketing. It handles everything from order entry to customer service, order fulfillment, inventory management, accounts receivable and accounts payable. [In addition], our e-commerce site, running on ATG Dynamo and an Oracle database; and the Artesia TEAMS digital asset-management system."

Major initiatives: "To create new customers, retain customers and grow our customers. How does technology support that? That's what IT is all about.

"Our e-commerce site is relatively young, and we try to think about what customers want and how can we support our business units to get our customers what they want. So, a primary objective right now is to push products onto the Web site at a faster rate, and the images and information about those products have to be accurate and consistent with our Pigalog [the company's catalog].

"We're doing that so customers can get the right information at the right time and we have all the information in all [channels]. It's about speed to market."

What It's Like To Work at... New Pig

- **Company:** New Pig Corp., a business-to-business catalog company that sells industrial waste cleanup supplies (*www.newpig.com*)
- **Main location:** Tipton, Pa.
- **Where's that?** "Right in the center of the state."
- **Number of IT employees:** Approximately 15
- **Number of employees (end users):** About 350
- **Interviewee:** Selesia Byrd, project manager. " 'Technologist for business' is what I use on my business card, because technology supports the business."

IT training: "Oracle, Java, ATG Dynamo, SQL. It's based on need, and we have a lot of need right now. We had three people out for training [late last month]. We're working on certification."

Employee reviews: Annual. "We review our accomplishments and set clear objectives for the next three to six months. We go over what we're learning, what we want to learn, what training we could benefit from."

IT career paths: "It isn't formalized, but we do have [advancement] from junior programmer to senior programmer to tech lead and project manager."

Bonus programs: "Everyone gets bonuses when the company does well, and we've gotten them every year since I've been here — that's 13 years."

Workday: "Flexible. We have huddles in the morning, so you have to be here for that, about 8:45. Some come in then, some come in at 6 or 7 a.m. We usually put in about eight and a half to nine hours."

Must people carry beepers? Cell phones? "The folks who monitor systems and hardware do."

Office decor: "There's a lot of pig stuff all over the place — piggy banks, a stuffed pig propped up on a fence. We have a Wall of Fame off the lobby that has framed displays of award-winning catalogs, which we call Pigalog awards."

In-house cafeteria/food service: "We have a cafeteria area, and it used to serve food and had salad bars. But people didn't use it much, so now we just have vending machines and use it more as a lunchroom.

Little perks: Tickets to Altoona Curve games (a Pittsburgh Pirates farm team), birthday gift certificates to the Outback Steakhouse, certificates to Hoss' Steakhouse for employees' anniversaries, coupons to use at a local sports shop.

Would employees feel comfortable e-mailing the CEO, Nino Vela? "Oh, heck yes. Nino is nuts — he runs around like a wild man sometimes. He's a lot of fun. He also responds to customers' e-mails."

The last word: "This is a very good place to work because everything revolves around the customer here. There's not a chain of bureaucracy. We do cross-functional work, and that's fun because you really see how you support the business when you're working cross-functionally with other teams. And I don't really know what it's like in other companies, but my guess is that it's not like that." ◗

Leslie Jaye Goff is a freelance writer in New York. She can be reached at lgoff@ix.netcom.com.

EXECUTIVE TRACK

Atmos Replaces CIO

Atmos Energy Corp. in Dallas has named Leslie H. Duncan as CIO. He will report to J. Patrick Reddy, chief financial officer. Duncan will be replacing Cleaburne Fritz, the company's vice president of information services, who will retire later this year with a tenure of more than 30 years.

In his new role, Duncan will be responsible for assessing the IT needs of five business units in 11 states, developing partnerships with hardware and software suppliers, analyzing the gas distributor's billing systems and upgrading systemwide technical operations.

Prior to this appointment, Duncan was CIO at Jo-Ann Stores Inc. in Hudson, Ohio, as well as CIO at The Limited Inc. in Columbus, Ohio.

J&L Appoints CIO

J&L Specialty Steel Inc. has appointed David F. Lee, 45, as CIO. Lee will report to Jacques Chabanier, president and CEO. In this newly created position, Lee is expected to manage the IT infrastructure and improve supply chain management performance for the Pittsburgh-based manufacturer of flat-rolled stainless steel products. Most recently, he was senior manager of the Internet services consulting group at Andersen in Pittsburgh. Prior to that, Lee served as CIO at Philadelphia Gas Works.

Ameristar Bets on Nicola to Lead IT

Las Vegas-based gaming company Ameristar Casinos Inc. has named Vic Nicola (below) project director for its IT department. He will report to Ursula Conway, vice president of IT at the company. Nicola will manage and implement systems projects at Ameristar's six properties in four states.

Previously, Nicola was vice president of operations and CIO at AdSpace Network Inc., a provider of digital signage in Las Vegas. Before that, Nicola was a senior director at consultancy Cap Gemini America in Atlanta at the time of its merger with Ernst & Young.

In addition, he has held various management positions in information systems and network computing with Cadence Design Systems Inc. in San Jose, Vanstar Corp. in Atlanta and Sun Life Financial Services of Canada Inc. in Toronto.

Former Walgreen CIO Named Chief Executive

Walgreen Co. has announced that President David W. Bernauer, a former CIO of the company, will become CEO effective Jan. 9. Bernauer, 57, will report to Chairman L. Daniel Jorndt.

Bernauer began at Walgreen as a pharmacist in 1967 and held various store management positions, becoming a district manager in 1979 and a regional vice president in 1987. He was promoted to senior vice president and CIO in 1996, and elected president and chief operating officer in 1999. Deerfield, Ill.-based Walgreen is the nation's largest drugstore chain, with fiscal 2000 sales of $21 billion.

Adecco Appoints Exec

Adecco Inc., a Melville, N.Y.-based division of Lausanne, Switzerland-based Adecco SA, has appointed Arnie Rind as CIO. Rind will report to Mark Eaton, the company's chief financial officer. Rind is expected to refine the firm's e-business strategy and further develop the interface between the Internet and the company's existing systems.

Most recently, Rind served as vice president of information systems at Atlanta-based Randstad North America.

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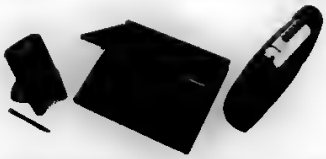
THREE PLACES AT ONCE.



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JOE AUER/DRIVING THE DEAL

Insist on Language To Cover Billing

IF YOU'VE NEVER HAD A BILLING DISPUTE with a vendor, you probably will. It's inevitable that at some point, you'll disagree with a vendor over an invoice. When it happens, the following questions will arise:

- If the invoice is incorrect, should you pay it?
- Should you pay only for the charges you believe to be correct?
- What's the process for challenging an incorrect invoice?

Most vendor form contracts require you to pay the full invoice — period. Other form contracts give you the right to question the invoice but still require you to pay in full. Either way, you're at a disadvantage: The vendor gets your money. It's up to *you* to get some, or all, of it back. Is that fair?

When you are negotiating with a new vendor or renegotiating with an incumbent one, add an invoice dispute provision to your list of objectives. Having it in the contract is handy when you believe your vendor may have made a billing mistake. Questioning an invoice should be your right. It's risky to *assume* that your vendor will work with you to resolve a billing dispute. After all, it *will* have your money. Vendors may listen to your concerns, but having the right to withhold your payment guarantees their attention.

In negotiations, secure the right to withhold payment for any item on any invoice you believe to be incorrect. Reassure your vendor that you'll pay all undisputed amounts.

Most vendors' first response will be: "Our billing systems work fine. Trust us and pay. If there's a problem, we'll work with you." Your answer could be, "Well, if you have such faith in your billing system, why is this an issue? It's an unlikely event. Right?" Be persistent; holding firm should produce a favorable vendor response.

Some vendors may offer counterproposals, limiting the total amount you can withhold — usually a fixed amount or a percentage of the total invoice.

There's no reason to accept limits. Pressing your point will usually eliminate any limits on withheld amounts. If you have to concede this, make sure the withholding limit is large enough to still draw the vendor's attention.

What's more, invoice disputes shouldn't be allowed to go on forever. It's in neither party's best interest.

In the end, lack of timeliness can cloud the issue and has the potential to harm the relationship. So place a time limit, like 60 days, on any dispute resolution process that's written into the contract.

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Also, remember that the vendor's sales representative probably isn't the same person who will handle invoice problems. Get clear protection in the contract.

Here's some contract language that helps:

If customer disputes, in good faith, any amount on o supplier invoice, customer and supplier will use all reasonable efforts to resolve and settle such dispute within 60 days after customer provides written notice of the dispute to the supplier.

Each party will provide full supporting documentation concerning any disputed omount within 30 days after receipt of written request for such documentotion.

Customer will have no obligation to make any payment of disputed charges on the invoice during the time it is subject to good-faith dispute.

Once the invoice dispute is resolved and settled, Customer will pay any amount due within 30 days following resolution of dispute. If the invoice dispute is not resolved and settled within the 60-day period, the dispute resolution provision will apply.

It's important to link the invoice dispute resolution to a broader dispute resolution process, creating a complete process that assures that both you and your vendor behave appropriately in handling all disputes.

If you don't have a general dispute resolution process in the contract, you should consider one. No one wants a fight, but given one, you should at least establish some rules — and a time limit for each round. ▶

BRIEFS

ICANN Stops Issuing Batch Domain Names

The practice of releasing expired .com, .net and .org domain names in one batch is overloading the domain name registration system, according to the Internet Corporation for Assigned Names and Numbers (ICANN), which is temporarily suspending the practice. Batch releases have touched off races by some registrars to acquire names that weren't renewed by the previous owners, putting extraordinary bandwidth demands on the registration system and making it difficult for other registrars to conduct normal business, according to ICANN. It is working with VeriSign Global Registry Service to develop an alternative plan for releasing the names.

Survivors Frustrated By Layoff Processes

A lack of communication about layoffs from upper management seems to be fueling discontent within corporations, according to a recent online survey of 759 corporate employees by Chicago-based Andersen. Half of those who kept their jobs said they learned about layoffs at their companies by rumors or word of mouth, while 10% said they found out through the media or other external channels, according to the survey. Only 43% were notified of impending layoffs through official company communication.

Among those who survived layoffs, 46% reported lower morale in the past six months, and only 42% said support for the remaining staff was adequate.

Amex Taps Intel for Online Services

The New York-based American Stock Exchange LLC (Amex) last week chose Santa Clara, Calif.-based Intel Online Services Inc. to deliver managed hosting services for its trading information Web sites.

Intel Online Services' duties will range from data backup of the Amex Web site to monitoring the network that connects the Amex to outside data providers that deliver real-time financial information.

Bank of America Selects B2B Software

Charlotte, N.C.-based Bank of America Corp. has selected integration software from Fairfax, Va.-based webMethods Inc. for its corporate banking integration program.

According to webMethods, the integration software will connect Bank of America's internal applications and extend those applications externally to the treasury systems of their corporate customers and partners.

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THIS WEEK

HELP FOR HELP DESKS

As the oumber of applications that help desks support increases, consolidated service desk software can help IT departments cut costs and improve service levels. But first, managers must work through integratioo and configuration issues. PAGE 50

FUTURE WATCH

Robert E. Kahn (above), co-inventor of TCP/IP and manager of the development of the Arpanet, has created a framework for interoperability of heterogeoeous information systems that aims to make digital information a "first-class citizen" on the Internet. PAGE 52

SECURITY JOURNAL

When logical arguments fail to convince managers that security assessment should be part of a virtual private network project, security manager Mathias Thurman illustrates the need with a Trojan borse demonstration. PAGE 54

EMERGING COMPANIES

InCert's TraceBack software can diagnose bugs in productioo code without bringing down the system or degrading application performance. PAGE 56

NICHOLAS PETRELEY

Tempting Integration

I JUST FINISHED A MARATHON SESSION rewriting Hypertext Preprocessor code, otherwise known as PHP4 (see *www.php4.org*). In case you're not up to date on your open-source projects, PHP is a wonderful open-source language for writing fast, server-side Web applications. It works on a variety of platforms, including Microsoft Internet Information Server and the open-source AOL Web server. I use it with the Apache Web server running under Debian Linux to run my nonprofit VarLinux.org Web site.

Aside from the broad platform support and myriad features available for writing sophisticated Web applications, PHP is very attractive because it's easy to integrate PHP code into your HTML. So easy, in fact, that you could start to learn PHP today and have your first useful application finished before the oext politician gets into trouble for making hankypanky with an intern.

But this leads me to the love-hate relationship I have with PHP. If you give in to the temptation to integrate too much HTML with PHP, your applicatioo becomes a nightmare to maintain. That's because the integration violates a fundamental principle of application design: Separate the logic, data and presentatioo layers.

With PHP — and just about every other server-side scripting language that integrates easily with HTML — the most commoo problem that occurs when you ignore this principle is that your site begins to serve up improperly formatted HTML tables. If you write code to output HTML tags as your program decides what to do with the page, you'll eventually get into a situation where one section of code spits out opening tags but there's almost no telling what other sections of code will complete these tags. The only way you can be sure you will always send out a page with matching HTML tags is if you can anticipate every possible way a user may navigate your site. In other words, forget it.

In my case, there were unmatched HTML table tags cropping up all over the place. The most recently released browsers I've beeo using are tolerant of such things, so I hadn't noticed until the complaints rolled in. Apparently, lots of people still use older versions of Netscape and Internet Explorer.

In my defense, I can't take full credit for the spaghetti code that is VarLinux.org. I based the site on an open-source Web application called PHP-Nuke (*www.phpnuke.org*) and modified the code for my needs.

PHP-Nuke is actually quite an impressive place to start, and I hear the latest version, 5.0, is much cleaner than the one I used as my foundation, Version 4.4.1. I already made too many changes to 4.4.1 to justify starting over with the oew version. So I finally decided to rewrite whole sections of the code I had, separating the PHP from the HTML. It would be a difficult effort to embark on, but I was confideot it would eventually make it much easier to modify and add features to the site.

The intelligent way to do this, of course, would be to modify the code on a staging server and move it over to the productioo site when it's ready. Unfortunately, although I've been called an idiot savant, only the first half of that is true. So I worked on the live site.

As it turns out, I caused only a dozen or so hours of downtime, and VarLinux.org isn't so heavily visited that it matters. So far, I've introduced more bugs than I've fixed, but the effort is already paying off. I created a number of functions that wrap content in fully balanced HTML tags, which guarantees that nothing will be left hanging.

I'm already finding it easier to solve old problems by using my new wrapper functions than by trying to hunt down every possible way an unbalanced page can occur.

Nevertheless, my advice would be to do as I say, not as I do. Resist the temptation to integrate server-side scripting code with HTML at the start of your project, and work on a staging server. But if it's too late for you, too, then I hope you are encouraged by my discovery that it is possible, if difficult, to undo the damage.

NICHOLAS PETRELEY, a computer consultant and writer in Hayward, Calif., is the founding editor of VarLinux.org (*www.varlinux.org*). Reach him at nicholas@petreley.com.

The FOOL'S Tale

The inside story of how The Motley Fool dumped its enterprise management suite when dot-com exuberance turned into the dot-com collapse. By Sami Lais

THE MOTLEY FOOL INC 's IT departmeot began streaming an enterprise management framework into its network during the digital economy's euphoric wave of expansion at the millennium's end.

It scuttled that effort in the riptide that followed.

It was a wild ride between the two eveots, says a rueful Joel Salamooe, Motley Fool's MIS director.

By sitting in oo key meetings and frequent interviews with IT managers during the past 10 mooths, *Computerworld* got a rare, inside look at the IT decisions that Motley Fool made along the way.

At the high point in January 2000, the Fool, as the investment advisory firm's employees refer to it, had grown from three frieods in a shack putting out a newsletter to more than 300 employees jammed into offices in three buildings in Alexandria, Va.; branches in Great Britain and Germany; and a new office planned for Japan. The Fool was addiog pages daily to its Web site and had just launched an online store and monthly magazine.

The IT departmeot was groaning under the weight of maintaining the applications, databases, Web servers and oetworks underlying that growth.

In November 2000, *Computerworld* meets with several of the IT managers — or "Fools," as they call themselves — to talk about their decisioo to buy the enterprise management framework they have spent most of the year installing and customizing.

The afternooo sun streams through the windows of the Motley Fool headquarters conference room. The mostly jeans-clad Fools crowd around a wide, gleaming wood table. They are young, ebullient, confident. They laugh easily.

"At the Fool, I think we're similar to many other operations in the digital world, in that people are our most expensive asset," says Dwight J. Gibbs, the Fool's "chief techie geek" (chief technology officer, in a less-hip organization). "The head count really drives the cost, so for us to say, 'We'll spend some money to decrease the need for future hiring' made a lot of sense in terms of the cost/benefit analysis."

Gibbs says IT managers at the Fool had a shopping list that included configuration management for servers and desktops, automated backup, a coordinated help desk, proactive network management, remote management and — "big wheo you're growing really fast" — asset tracking.

The options were either a collectioo of best-of-breed software or an integrated enterprise management package, Gibbs says. The Fool chose the latter.

There's no one right decision, says Cameroo Haight, an analyst at Gartner Inc. in Stamford, Conn. "With a framework, you deal with the complexity upfroot in deploying it. With point solutions, you spend

the time on data integration," Haight says.

"We thought we could probably double the [Web site and network] traffic without having to hire more people to manage it," Gibbs says, prophetically, as it turns out.

By summer 1999, he had narrowed the field to products from BMC Software Inc. in Houston; Computer Associates International Inc. in Islandia, N.Y.; and IBM-owned Tivoli Systems Inc. in Austin, Texas.

All three sounded good on paper, Gibbs says, but he remained skeptical. He set up a test LAN and gave each vendor a week to install and configure inventory, software distribution, job scheduling and network management software, and another week to demonstrate it. Then the Fool had another week "to play with it on our own to see if it was going to meet our needs," Gibbs says.

Overseeing the bake-off was Nipul Patel, manager of the server administration group. One package lacked components that the Fool was looking for, he says. Another vendor had trouble making its software work in the test environment. Patel's recommendation: Tivoli's Enterprise Management suite.

January 2000

Patel takes up his new duties as project lead for the Tivoli installation, and Gibbs hires systems integrator SRA International Inc. in Fairfax, Va. After three weeks of planning, SRA begins the hands-on training and installation.

Many organizations have unrealistic expectations going into such an implementation, explains Cedric Deal, SRA's project leader on the Motley Fool installation. "It drives me nuts how many people purchase a product and don't understand what it does," he says. Unrealistic expectations are the top reason why 70% of framework deployments fail to achieve their projected return on investment after 18 months, according to a Gartner study.

But the Fool set realistic goals and was well prepared, Deal says. "If we needed something done, a decision made, someone was always there to do it. You can't afford to put these things off if you're going to stay on schedule," he says.

By April, SRA's team was finished.

May 2000

The main rollout, if not all components and customization work, is done. The Fool's staff, with consultatioo from Tivoli, rolls out additional components in the ensuing mooths.

By setting a measured pace, the Fool avoided a common mistake, Haight says. "Too many organizations buy the whole galactic package and try to do too much at once," he says.

During the summer of 2000, the Fool, along with much of the rest of the business world, is enjoying its greatest growth spurt ever and hires more than 100 employees.

November 2000

The number of desktops has swelled to 412. About 45 servers in Alexandria, Va., support back-office operations and content management. Another 100 servers in the U.S., the U.K. and Germany provide localized content and keep the mission-critical Web site up and running. "We're small in real life, but

The FOOL'S Tale

Continued from page 47

we're huge on the Web," Gibbs jokes.

Server configuration and change management are under control. Server backup takes less than an hour and a half, down from a half-day manual task. The Fool's network management team is spending less time putting out fires and more time planning to prevent bottlenecks and slowdowns.

On the desktop side, the software distribution workload has been halved, gloats Joshua Brown, "overlord of the LAN sanitation engineers" and head of desktop support. MP3 files and similar unauthorized software have been swept from company PCs, and all software licenses are accounted for.

Implementation of Tivoli Service Desk is still a work in progress, Gibbs says. IT staffers are building a database of trouble tickets and writing code to integrate it with inventory and asset-tracking components.

Such a measured pace allows time for processes to develop incrementally, "instead of trying to come up with new ones all at once," Haight says.

December 2000

IBM announces that it will sell its Tivoli Service Desk software suite, including asset-, change- and problem-management components, to Peregrine Systems Inc. in San Diego for $105 million. Peregrine will integrate the software into its own ServiceCenter asset management suite.

The news comes as a surprise to Gibbs. He sounds angry on the phone. He sputters for a moment, then draws a deep breath and says, "Let's just say I'm not terribly happy about it."

Having a single-vendor solution was the point of buying the Tivoli software, he says. "When you have only one management vendor and something goes wrong with the software, you know where to point the finger," says Gibbs. "Now, my one-vendor solution is going to be a two-vendor solution."

Work installing Service Desk at the Fool halts. Construction of the trouble-ticket database also stops, as does writing of scripts to automate its integration. Gibbs and his staff wait for the dust to settle.

But nothing settles. Instead, the dot-com crash rate accelerates, and the Fool isn't immune.

February 2001

Second-round venture financing of $30 million isn't enough to prevent massive layoffs. Shell shocked by the sudden departure of 115 of their fellow Fools — a third of them from the IT department — Gibbs and Patel cancel a meeting with Peregrine representatives to talk about switching software licenses from Tivoli Service Desk to Peregrine ServiceCenter.

Instead, they join current and now-former colleagues at a local pub to talk, try to make sense of it all and commiserate with those leaving and those staying.

Meanwhile, the number of visitors to the Fool's Web site this month tops 2.9 million — more than double the traffic of the previous February — yet it's managed by a smaller IT staff than it was last year.

March 2001

The meeting with Peregrine is sandwiched into a day of moving servers and consolidating into smaller quarters for the Fool. In a dim warehouse, Brown, Patel and Salamone set up metal folding chairs and watch a PowerPoint presentation projected on the bare wall.

Patel and Brown lay out their list of requirements to James Fernandez, a Peregrine senior systems engineer. Fernandez nods enthusiastically and talks about "enormous out-of-the-box functionality."

The Fools ask few questions, and in less than an hour, the meeting runs out of steam. Salamone and Brown confer quietly. Fernandez and Bracken stand a small distance away.

"They're giving us two choices," Patel says. "We can evaluate ServiceCenter, or we can stick with Service Desk." He thinks for a moment.

"The ideal situation is never going to happen. But I'm not going to decide before I look at some other products. We're starting from scratch on this," Patel says.

The meeting is over.

Brown hurries the few blocks back to the Fool's main offices. The wind off the Potomac snatches at his coat.

"A lot has changed," he says, wrapping his coat more tightly around himself. "The layoffs — well, that day was pretty bad." But most of the laid-off IT staff have already found jobs, he says, brightening. "Maybe the worst is over."

June 2001

Another 45 Fool employees — nearly half from IT — get their pink slips.

Although the Service Desk licenses have been converted to ServiceCenter, the Fool is using neither.

"Things are pretty tight, as far as resources go right now," Patel says. "At our current level, we don't have enough employees to make it necessary."

July 2001

The Fool stops using nearly all of the Tivoli software. Also dropped is BMC's Patrol network-monitoring software. They require too much maintenance for his reduced staff to handle, Patel explains.

The cost of maintaining an enterprise management framework can be steep, says Haight. Gartner's rule of thumb is that "for each dollar you spend on a framework, you're going to spend between $3 and $7 on services," he says.

"We've paid for the licenses and for Tivoli support for the rest of the year, but we're not using it," Salamone says. The last of the Tivoli software, NetView, which manages the Fool's 150 servers, is being phased out in favor of a tool the Fool already owns, SiteScope Web server monitoring software from Freshwater Software Inc. in Boulder, Colo. "It's easy to deploy, easy to run and very stable," he says.

The Fool's decision isn't unique, Haight says.

"We have seen a distinct trend of clients looking to point solutions to alleviate the specific area of pain," he says. The point solutions tend to have a narrower focus than framework suites, Haight explains, "but they often go deeper and offer richer functionality for that specific focus."

The Fool is also making greater use of Microsoft Corp.'s Systems Management Server (SMS). "It makes sense — we're a Microsoft shop," Patel says. One IT staff member is looking into SMS's inventory, change management and asset-tracking capabilities.

"SMS wasn't ready for the enterprise when we first looked at it [in 1999]," Salamone says. "But it's come a long way since then."

Epilogue

So, was the Tivoli implementation a mistake?

"I don't know," Salamone says. "You look at the projections when the economy is going great, and everything is grow, grow grow. When we did it, we thought we were going to have thousands of users in 15 or 20 countries. Turns out we didn't, but what if we had?

"Hindsight is always 20/20," he adds, "and with that in mind, I could say maybe we should have spent a little more time on the business realities; maybe we should have gone for a solution for less than a large-scale enterprise. But when the growth indicators are telling you you're going to have 1,000 servers, you have to think, how do you go about managing them?

"We rely on our systems. If our Web servers are swamped and can't handle the traffic — well, if we're not online, we're out of business," Salamone says.

The hard landing has changed the Fool, according to Salamone.

"Purchases definitely get scrutinized in a way they don't in times of prosperity," he says. But there's not much purchasing going on, in any case.

"I call what we're doing now 'creative destruction,' " he says. "We have a lot of interaction with the business side, and right now, we're being asked to come up with new solutions and new constraints and to reduce costs."

If the tone around the Fool is austere, it's also guardedly hopeful. "We want to be ready for the next growth spurt," says Patel.

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HELP DESK GETS A LIFE-LINE

Consolidated service desk software lets help desk staff proactively address problems and resolve calls more quickly. By Drew Robb

A BANK IN FRANCE DOESN'T want its financial processes halted just because a flood or blizzard shuts down roads in the Midwest. But for Wausau Financial Systems in Mosinee, Wis., that was a very real possibility. "It's part of our disaster plans to have people work from their homes," says Tom Nohelty, Wausau's vice president for customer care.

Wausan provides check processing and bill payment software to more than 800 financial institutions worldwide. To allow the firm's 83 support staffers to work from home when needed, Nohelty switched to Web-based help desk software. Now staffers can access help desk resources using only a Web browser. "This wasn't realistic with [the previous] client/server implementation," he says.

Web interfaces are just one way that help desk management systems, also called consolidated service desk (CSD) software, have evolved beyond their original role of simply tracking calls to improve end-user satisfaction. CSD software lets IT be proactive in addressing system and user troubles without increasing support staff. It can help prioritize calls, analyze problem frequency and identify patterns. Products also include self-help tools for end users, desktop remote-control software and scripts to repair applications. And CSD software can share information with customer relationship management and other back-end applications, giving support staff more information.

All this added functionality comes at a price, however. To benefit, firms must design and implement better support procedures, keep knowledge-base articles up to date, maintain inventories and integrate the CSD software with other back-end systems.

Nevertheless, an organization using a full range of support tools can cut the average cost of a call to $10 to $14, as opposed to $60 per call for incident tracking systems, according to Kris Brittain, an analyst at Stamford, Conn.-based Gartner Inc.

The promise of substantial savings has the attention of IT managers. According to Gartner, the CSD market

grew from $200 million in 1995 to $1.15 billion last year and is expected to grow 20% this year.

Also fueling interest is an explosion in the number of software applications organizations must support. In 1996, help desks supported an average of 25 applications. Now, they support more than 200, according to Gartner.

Despite this greater burden, it isn't economically feasible for firms to continually add help desk personnel. "You can't just keep adding bodies and have a sustainable business model. You need tools," says Brittain.

For Anne Arundel County School District in Annapolis, Md., the right tool was Remedy Help Desk from Remedy Corp. in Mountain View, Calif. The software, which replaced an application developed in-house, tracks and logs calls and provides an online knowledge base, static IP address monitoring, contact information and wide-area network management data.

"Due to the complexity of our old, homegrown DOS-based system, we'd have 15 pieces of paper to deal with on each call," says senior support specialist Kim Olds. Gone is the paper trail generated by high traffic volumes from 3,000 users in 120 locations. In its place, 10 help desk personnel and a dozen field-support analysts use the system, which works with Microsoft Corp.'s Systems Management Server.

"We now resolve 80% of problems during the first call, up from 50% before," says Olds. For the other 20% that require on-site assistance, field-support analysts remotely download trouble-ticket and contact information using handheld computers.

To upgrade its service capacity, Wausau switched from a homegrown help desk application to Santa Clara, Calif.-based Network Associates Inc.'s Magic Solutions Total Service Desk (TSD).

Unlike Remedy, TSD runs as a Web-based application. But that doesn't mean Wausau avoided integration and installation hassles. It took two weeks to install and configure the software, a process that included hardware upgrades, consultant help and training. The migration involved switching from a Sybase Inc. SQL Anywhere database to Microsoft's SQL Server 7, which in turn required moving to servers with bigger hard disks and more RAM.

Consultants installed the software in a few days and spent two weeks training staff. One integration problem involved TSD and Microsoft's Great Plains financial software. Wausau writes service contracts and stores the data in its Great Plains application. TSD then extracts and uses the contract and customer address information. Unfortunately, billing addresses often differed from the locations needing service. To resolve this, Wausau had to identify the billing address as the prime location and create sub-addresses in Great Plains that TSD can import for the service locations.

The firm also imported its Microsoft Word knowledge-base documents into the system, which support personnel access through keyword searches. Nohelty says he would like to see a wizard-type application that offers a series of steps that technicians can walk callers through. Instead, support personnel now have to read a document, decide if it's applicable, work out appropriate instructions and relay them to the callers.

Nohelty says he also wishes that the client Internet interface could be customized. Currently, it tells clients only what the problem is and whether the ticket is open or closed. He says he wants it to show the exact actions taken on each trouble ticket.

Wausau also implemented Network Associates' MagiCall, a computer telephony integration application that can determine the caller's identity, pull up account information and send it to the help desk screen, automatically inserting customer data into the service ticket. Nohelty estimates that this feature increased efficiency by 10% to 15%.

Some CSD products have a Web-based self-service option, but that's not a replacement for help desk staff, practitioners say. Every dollar cut from formal support budgets equals $2 in lost time, says Fred Broussard, an analyst at IDC in Framingham, Mass. Without a help desk to turn to, users tend to seek out friends or bosses for advice.

"A self-service knowledge base is a good idea, except where users are not familiar or comfortable with technology," says Broussard. In such cases, it may be best to offer limited data to end users, leaving most matters for support staff to handle.

The Anne Arundel County School District sees Web self-service as a complement to its help desk software and plans to implement a self-help knowledge base and Web-based self-service ticketing system. The combination should help reduce call volume, make support staff more efficient and still keep end users happy. ◗

Robb is a freelance writer in Tujunga, Calif.

Quick Link To learn about how preventive measures such as disk defragmentation can reduce help desk calls, visit our Web site
www.computerworld.com/q?22610

Homegrown Help Desk Software: Worth the Effort?

Despite the bells and whistles of commercial help desk products, many companies have written their own software. "A custom solution can really address a company's business rules, such as providing instantaneous service to high-profile individuals," says IDC analyst Fred Broussard.

But many firms are making the switch to off-the-shelf software. "We couldn't do what we wanted to do with our homegrown application," says Tom Nohelty, vice president of customer care at Wausau. "And it's not feasible to write what Magic Total Service Desk already had in its system."

"Most often, we find it is cost-prohibitive for organizations to be in the application development business," adds Gartner analyst Kris Brittain.

Help desk software vendors are also making it easier to customize applications without altering the basic code. For example, the Anne Arundel County School District in Annapolis, Md., used Remedy to create a custom registration and scheduling program for in-house IT training.

"We have things in our school district we need to track differently," says senior support specialist Kim Olds, "but we can customize it in-house without hiring a consultant. It can be easily modified to create the applications we need."

– *Drew Robb*

Help Desk Software Vendors

- *Network Associates Inc.*, Santa Clara, Calif. *www.magichelpdesk.com* **Magic Total Service Desk**
- *Computer Associates International Inc.*, Islandia, N.Y. *www.ca.com* **Unicenter Service Desk**
- *Remedy Corp. (Acquisition by Peregrine Systems Inc. in process.)* Mountain View, Calif. *www.remedy.com* **Remedy Help Desk**
- *Peregrine Systems*, San Diego *www.peregrine.com* **ServiceCenter**
- *FrontRange Solutions Inc.*, Colorado Springs *www.frontrange.com* **HEAT**
- *GWI Software*, Vancouver, Wash. *www.gwi.com* **C.Support for Lotus Notes** **C.Support for Microsoft Exchange**
- *Epicor Software Corp.*, Irvine, Calif. *www.epicor.com* **Clientele for Help Desks**
- *BlueOcean Software Inc.*, Tampa, Fla. *www.blueocean.com* **Track-It**

Reinventing The Internet

Robert E. Kahn co-invented TCP/IP and managed the development of the Arpanet — the forerunner of the Internet — at the U.S. Defense Advanced Research Projects Agency in the early 1970s. For those accomplishments, President Clinton awarded him a National Medal of Technology in 1997.

Now, as president of the nonprofit Corporation for National Research Initiatives in Reston, Va., Kahn is deep into a "reinvention of the Internet one layer up." He has developed a framework for interoperability of heterogeneous information systems that aims to make digital information a "first-class citizen" on the Internet.

Kahn's architecture contains "digital objects" — data of any type, plus a long-lived identifier called a handle. The objects can reside in any kind of storage system, or repository, accessed by a Repository Access Protocol, which enforces rights and permissions to the data within. Kahn recently told Computerworld's **Gary H. Anthes** *how taking a look at the past can guide us into the future.*

MARGARET LAMBERT

WHO IS HE?

Internet pioneer **Robert E. Kahn** is chairman, CEO and president of the Corporation for National Research Initiatives, a nonprofit organization established to "provide leadership and funding for research and development of the National Information Infrastructure."

In congressional testimony three years ago, you urged the federal government to help the U.S. maintain leadership in e-commerce. How's that going? We've made small progress, compared to what's possible. We've had very little recognition at the federal level about the importance of pilot projects. For example, one project could be in authentication of information. When you get something off the Net, there's no way to know if it's accurate, and there's no one party to provide the standard for that. The government could establish a way to verify information going to the public, and whatever they do might then be a good template for the private sector as well.

Is the Arpanet a model for government/industry cooperation? The model I always thought was the right one — what we put in for the Internet from Day 1 — was something that started with total government control. We — I, and then [TCP/IP co-inventor] Vint Cerf and I — ran everything for a while, and over the years, we devolved little by little to the private sector, to the point today that government has very little role to play.

But the government-sponsored standards for openness and interoperability built into the Arpanet live on in the Internet today, right? Yes, but more and more, we are seeing the need for generalized standards for doing the critical functions [like authentication] that everyone wants to do. But most organizations want to create their own and see if they can create a monopoly.

Like Microsoft? People focus on Microsoft and say, "What do we do about the operating system?" I don't think that's the issue at all. Most people are going to be on the Net in the future, and as nets get faster and faster, [users] will be able to download software from anywhere. If they have the right protocols, they can do plug-and-play just like that. So you don't need to buy an operating system anymore; you can just suck all this software in.

You also told Congress that digital information should be a "first-class citizen in the Net." In it? No, I think it's still a third-class citizen. Everything in the physical world is an identifiable thing with some notion of ownership. It has identity and value. But very few things on the Net have those attributes. If you take a piece of data off the Net, it's not clear who owns it, what the value is, what you can do with it, what you can't.

In that what you're trying to address in your digital library initiatives, in which you say you're developing ways to "uniquely and persistently identify, manage and track" digital information? Yes, among other things. Today, if you want to find a letter you wrote 12 years ago, what would you do? You wrote it on a 5.25-in. floppy, and it's in an old machine in your basement. It's lost.

You've said that the repositories that are part of your digital library concept aren't literally databases. What do you mean? A repository is an interface specification that we are hoping people will buy into, because that automatically gives you interoperability. People say, "We don't need your repository because we already have a database." It's like they said in the early days of the Internet: "We don't need the Internet because we already have our own networks." What I've been developing is really a reinvention of the Internet, one layer up. ◗

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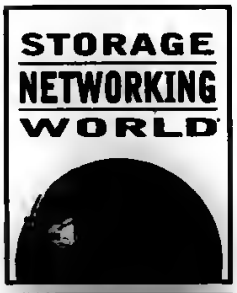

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Security Review Gets No Respect From Managers

After project leaders pan vulnerability assessment, a Back Orifice demonstration quells the skeptics

BY MATHIAS THURMAN

MY COMPANY is about to deploy a virtual private network (VPN). During a recent project meeting, the project manager asked each department representative to identify six tasks related to our areas nf responsihility. To my surprise, my proposal for a security review met with resistance.

Each representative, from corporate communications to training, network engineering, systems administration and so on, read his list. Then I recited my task list. I proposed a vulnerability assessment of the infrastructure, including a review of the configurations relating to the Lightweight Directory Access Protocol (LDAP) server and the VPN gateway. I also recommended an overall review of the architecture.

SECURITY MANAGER'S JOURNAL

I viewed these tasks as essential, but the group's reaction made me feel like I was some sort of saboteur, out to see thar the project would fail.

The project manager, without even taking the time to understand what a vulnerability assessment entails, immediately started pushing back on the assessment tasks, suggesting that this was a new requirement that would cause deadlines to slide. I insisted that we couldn't go live with the project, which is a new technology for the organization, without a thorough assessment to ensure the infrastructure's integrity.

I further argued that if we didn't take the time tn address security concerns and someone hacked into our system, the firm could indirectly be held responsible under the Uniform Trade Secrets Act.

Under the act, if the management of a company knowingly fails to provide the appropriate level of security to a server containing proprietary source code and the system is compromised, the information might not be protected as a trade secret. This could jeopardize our ability to seek damages if trade secrets are compromised.

I also explained that under the new Health Insurance Portability and Accountability Act (HIPAA), we are expected to protect certain data and that the new VPN will provide access to information used for insurance purposes, as specified in HIPAA. Still, I received push-back.

Frustrated, I insisted that I would perform a vulnerability assessment against the infrastructure, whether it was part of the project plan or not, and that the results would be forwarded to the CIO and legal counsel for review. The project manager still didn't budge.

Later, when I received an e-mail from the project manager, the real issue became clear. He stated that he didn't feel comfortable with my team trying to hack into the production netwnrk. But a real hacker, I responded, doesn't care whether you feel comfortable or not.

I received nn response. Getting my security tasks accepted would call for a new approach.

Proving the Point

I decided that I would use this project to demonstrate the importance of good security and hope that afterward, security would be an integral part of all future projects.

Conducting a security assessment is like buying a house. Part of the process is a mandatory termite inspection. You usually don't ask a termite inspector how or what he'll do; you just know that after he's done, you'll get a report of any potential problems. Similarly, an IT-related project requires a security assessment prior to deployment. If the assessment report reveals issues or vulnerabilities, the project team needs to fix those prior to going live.

When the project manager was presenting the plan using his laptop and a presentation program, I noticed that he had disahled his antivirus software. This gave me an idea. I have a working copy of the Back Orifice Trojan horse program, which I downloaded off a warez Web site about a year ago for use in my firm's security testing lab. At the time of Back Orifice's release in 1999, I hegan investigating the program and became fairly adept at configuring it.

Essentially, Back Orifice is a remote-control program, similar to Cupertino, Calif.-based Symantec Corp.'s pcAnywhere. It consists of a server (which the hacker sends to the unknowing victim) and a client (which the hacker uses to access the server).

The attacker can preconfigure the server program, disguise it under a legitimate file or program name and send it as an e-mail attachment that the recipient may be tricked into executing. Hackers may even spoof the e-mail address to make it look like the message has originated from a trusted source so recipients will be more inclined to launch a program without question. Since the project manager's virus protection was disabled, chances are that the program would have installed on his machine withnut detection.

By now, readers may be thinking that I sent Back Orifice to the program manager. Well, I didn't. That would be wrong, not to mention illegal. But it made me realize that Back Orifice was a great way to demonstrate the importance of a security assessment. I obtained permission from another person in the office to use his machine to demonstrate how Back Orifice could allow a hacker to gain access to our critical infrastructure through his computer.

I combined the demonstration with some CERT Coordination Center and vendor advisories relating to security hnles in Nortel Networks Corp.'s Contivity VPN switch and the Sun Microsystems Inc.'s iPlanet LDAP server we use. Then I pulled up a list of several hundred vulnerabilities related to our Solaris 2.7 host computer.

After the demonstration and lecture, there were few arguments about the necessity for an assessment of the VPN infrastructure. The project manager still wanted a detailed list of task items related to the assessment. I commented that the termite inspector doesn't normally provide details of how he will conduct the inspection, but the project manager didn't buy that argument. So I spent the next day providing detailed VPN configuration and Unix hardening standards.

It's hard to believe the cultural issues surrounding the importance of information security with companies that have been around for many years. If any readers have had similar experiences and are willing to share their trials and tribulations, join me in the Security Manager's Journal forum. ▶

THISWEEK'SGLOSSARY

Warez site: These underground Web sites offer access to a wide range of downloadable software, including pirated commercial programs and hacker tools. Such sites make it easy for script kiddies to jump on the bandwagon when new viruses or hacking tools become available. For example, a search for "Back Orifice" on one such Web site produced a list of 99 download sites.

LINKS:

http://nsi.org/Library/Espionage/usta.htm: View the text of the Uniform Trade Secrets Act here. The act defines a trade secret as "the subject of efforts that are reasonable under the circumstances to maintain its secrecy."

http://aspe.hhs.gov/admnsimp/: If you're involved in health care or insurance, you need to be familiar with HIPAA, a copy of which appears at the Web site of the U.S. Department of Health and Human Services.

www.securityfocus.com: If you're faced with having to justify security and want to quickly search for vulnerabilities relating to your infrastructure, check out the Web site of San Mateo, Calif.-based SecurityFocus.com.

Quick Link: For more on the Security Manager's Journal, including past journals, visit: www.computerworld.com/q/q2000

■ This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com or go to the Security Manager's Journal forum.

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InCert Locates Bugs in Real Time

Software diagnoses bugs in running apps without degrading performance

BY GARY H. ANTHES

THE PROBLEM a major customer was having with Phase Forward Inc.'s software was so serious and difficult to diagnose that the company put its entire development team — eight people — on it for two months. Solving a similar problem today would take one person a few hours, says Nick Stamos, chief technology officer at the Waltham, Mass.-based software company.

The difference? Phase Forward is now using TraceBack from InCert Software Corp. in its production systems. TraceBack lurks in the binary code of programs as they run, and when something bad happens, it instantly spits out detailed diagnostic data for software developers to analyze.

Software tools called debuggers have been able to do that for years, but InCert says — and customers agree — that TraceBack is unique in its ability to work in production code with virtually no performance penalty.

Phase Forward develops software that helps pharmaceutical companies capture and report on clinical trial data. The C++ software that the company runs for its clients on Windows NT servers is complex, Stamos says. Yet end users — doctors and nurses — can't be expected to diagnose problems or to help developers reproduce them. TraceBack lets Phase Forward analyze problems, from minor anomalies to system crashes, without involving users, he says.

TraceBack can be configured to generate snapshots, or "snaps," of diagnostic information such as statement execution sequence and memory contents on command or when certain events occur or are likely to occur.

"There's absolutely no way to do this kind of work without this tool," Stamos says. "Before, it was basically shooting in the dark, and hopefully, if you shot enough times, you hit something."

Cambridge, Mass.-based InCert was founded in 1997 by Anant Agarwal, a computer science professor at MIT, along with two compiler optimization experts from Hewlett-Packard Co. The patented algorithms in TraceBack use compilerlike techniques for analyzing and predicting program flow. That allows TraceBack to insert software agents into a program's binary code in just the right places to capture diagnostic data.

That careful placement of just a few agents keeps runtime overhead low, says InCert CEO Michael Torto.

InCert's first product was for IBM mainframes, but more recently, the company has turned to distributed environments that run Windows, Visual Basic, C and C++. InCert says it's also developing a product for Solaris and Java.

Spirian Technologies Inc., an application service provider in Chicago, uses TraceBack in development and will soon deploy it in its production systems. President and CEO Alan Wasserberger says his programmers no longer have to write their own debugging code.

"We can write 50% less code because we don't have to write trace code," he says. Wasserberger estimates that when TraceBack rolls out in production, it will reduce the time required to fix problems encountered by end users by 80%.

Torto says InCert will extend the capabilities of TraceBack from debugging to ongoing performance analysis. The company is working on agreements with Keynote Systems Inc. in San Mateo, Calif., and Mercury Interactive Corp. in Sunnyvale, Calif., to bundle TraceBack with their monitoring software, he says.

Torto says InCert will address another customer request as well — to make TraceBack easier to use.

"The information collected is phenomenal, but you do have to be a fairly senior developer to conceptually understand it," says Stamos.

The difficulty lies in relating the contents of snaps to the correct transaction, process and thread when many are occurring simultaneously, Stamos says.

INCERT'S Michael Torto (left) and Anant Agarwal say their product, TraceBack, saves costs by debugging apps while they run.

InCert Software Corp.

1 Kendall Square, Building 1400W
Cambridge, Mass. 02139
(617) 621-8080

Web: *www.incert.com*

Niche: Its debugging software analyzes problems as production applications run, without degrading performance.

Company officers:
- Anant Agarwal, chairman and founder
- Michael Torto, CEO
- Andrew Ayers, chief scientist
- Richard Schooler, chief technology officer

Milestones:
- 1997: Company founded
- 1998: TraceBack for OS/390 launched
- 2000: TraceBack for Windows introduced

Employees: 30

Burn money: $13.5 million from Bessemer Venture Partners, Commonwealth Capital, Fidelity Ventures, Ascent Venture Partners and Still River Fund

Products/pricing: TraceBack for Windows starts at $495 for one developer seat; TraceBack for OS/390 is $95,000.

Customers: Charles Schwab & Co., Fidelity Investments, Phase Forward, Prudential Financial and Spirian Technologies Inc.

Partners: Microsoft Corp., Sun Microsystems Inc., BMC Software Inc.

Red flags for IT:
- Using the product in complex environments requires highly skilled users.
- TraceBack works only with OS/390 and Windows-based systems. (Java and Solaris versions are in development.)

COMPUTERWORLD emerging companies

[the buzz] STATE OF THE MARKET

Credibility Gap

InCert CEO Michael Torto says the biggest challenge his company faces is one of credibility.

The reluctance to believe InCert's performance claims is understandable, says Herb Van Hook, an analyst at Meta Group Inc. in Stamford, Conn. He says some companies run the more traditional debugging tools in production environments despite the overhead, "but they pay a 50% premium in infrastructure costs."

The market for debugging tools and "application optimizers" will grow rapidly in the coming years as applications become more complex, more "componentized" and subject to faster rollouts due to competition, according to Van Hook. "Plus, applications have to be on all the time. People don't have the chance to say, 'Oh, let's just wait an hour and we'll back up and recreate this,' " he adds.

But Van Hook says InCert will need to broaden its appeal, either by being acquired or via partnerships. "I don't see them getting really large on a standalone basis," he says.

Competitors include the following

Mutek Solutions Ltd.

Boston
www.mutek.com

Mutek's Windows-based BugTrapper generates a record of events inside software in the moments before a problem occurs. It provides an off-line trace from which developers can analyze program flow by scrolling back and forth along the execution path.

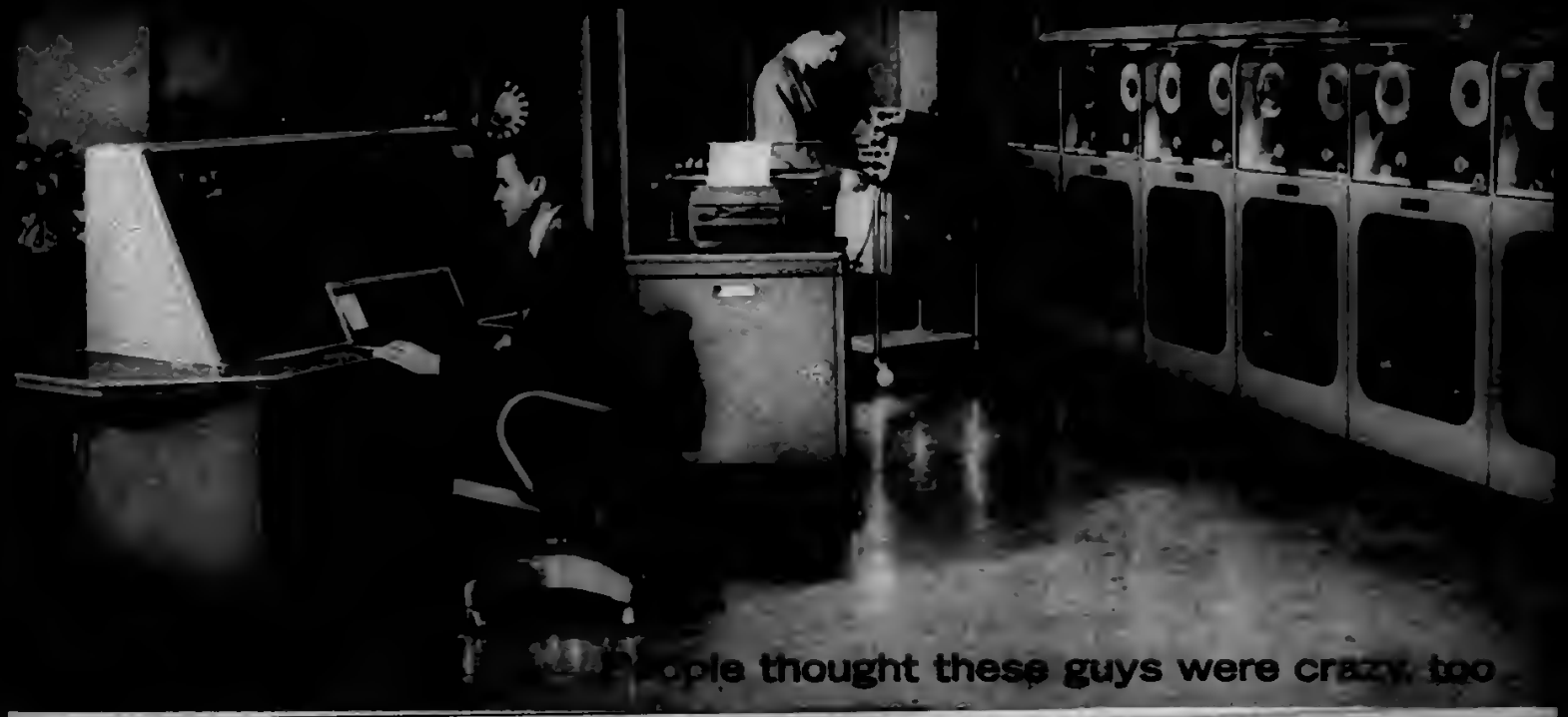
Mutek also sells the AppSight system, which places "black boxes" locally and at remote sites, where they collect event data like flight recorders.

Geodesic Systems Inc.

Chicago
www.geodesic.com

Geodesic's Remidi software detects, diagnoses and resolves server-based problems at runtime. Its Great Circle product is a "debugging environment" that helps developers test, diagnose and resolve memory problems such as excessive application memory use. Its Web browser interface allows remote debugging over an intranet.

– Gary H. Anthes



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- Worlds Collide: Who Will Dominate Web Services?
- Web Services: Why They'll Change Your Business Forever

KEYNOTE SPEAKERS

Bill Coleman
Founder, Chairman, and CEO, BEA Systems

James Gosling
VP & Fellow, Sun Microsystems

Sheila Anthony
Commissioner, FTC

FEATURED SPEAKERS

- **Abha Divine**, VP Corporate Strategy, SBC Communications
- **Charles Fitzgerald**, Director of Strategy and Business Development, Microsoft Corporation
- **Steve Holbrook**, Web Services Technology Evangelist, IBM
- **Andy Roberts**, CTO, Bowstreet
- **Larry Augustin**, CEO, VA Linux Systems
- **Doug Cavit**, CIO, McAffee.com
- **Dana Gardner**, Research Director, Aberdeen Group
- **John Kunze**, President & CEO, PlumTree Software
- **Marvin Richardson**, CTO, Lante
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Responsible for managing multiple hardware and relational databases for the computer systems of corporate human resources (CHR) division. Administers operation of multiple client-server systems and databases in the creation of corporate human resources standards and procedures relating to human resources (HR) software. Consults on database design, maintenance, enhancements, expansion of logical design and physical database as per corporate requirements in HR applications/ business systems. Programs customized data loads, utilities and queries. Develops, implements and supports database's reviews. Validates and enhances logical database designs and defines and implements physical database. Performs capacity planning for various systems and databases. Performs database performance monitoring, tuning, backup and recovery operations. Installs/Upgrades Oracle RDBMS and related products. Utilizes knowledge of a broad range of database client-server technology (including Oracle RDBMS, SQL, PL/SQL, SQL Loader, SQL Net, TCP/IP, LAN and NT/Unix operating systems) as well as human resources applications/ business systems. Applicants must possess a Bachelor's degree in Computer Science and five years experience in Oracle RDBMS, system design and analysis with client-server technology, three years experience in Oracle database administration, performance tuning, backup/recover, Oracle utilities and capacity planning, and two years experience in Human Resources applications/business systems and five years experience in the job offered or as a Database Administrator, Programmer or Engineer. 40 hrs per week (7:45 A.M. to 4:25 P.M.) $78,000.00 per year. Job located in Abbott Park, Illinois. Applicants must show proof of legal authority to work in the U.S. Send resumes to ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY, 401 South State Street - 7 North, Chicago, Illinois 60605. Attention: Brenda Kelly. Reference # V-IL 24613 - K. AN EMPLOYER PAID AD. NO CALLS - SEND 2 COPIES OF BOTH RESUME AND COVER LETTER. All resumes will be noted and forwarded to the employer for consideration.

Manufacturing comp. in Aurora, IL. Req. Software Eng. with M/S deg. & 1 yr. exp. or equiv., w/foll. AS/400, PRG/400, CL/400, RPG/400, SQL, ACCESS Das., dev, maintain, software progs. interface code & test programs. Write reports, formulate software. Send res. Dept. GC, Sunbeam Health & Safety Prod. 3901 Liberty St. Road, Aurora, IL 60504

Software Developer wanted by Int'l Mktg Research Co in TX. Oversee design applications, write flowcharts & program descriptions, collect & analyze data. MS in Comp Sci & 1 yr exp in job offered req. Respond to: HR Director/Millward Brown, 1250 Capital of TX Highway, Bldg 1, Ste 600, Austin, TX 78746

Software Engineer (St. Louis, MO): design, develop and maintain Internet/Intranet applications utilizing C/C++, Java, JSP, Visual Basic, SQL, Oracle, ASP, XML and ColdFusion; evaluate systems effectiveness, recommend improvements, and troubleshoot problems in programming and other project specifications. Requires MS in Comp. Sci. or CIS plus min. 6 mo. exp. Competitive salary: 40hr/wk, Mon.-Fri., 8:00am-5:00pm. Resume to Marti Stubblefield, HR Dept., Hellmuth Obata & Kassabaum, Inc. 211 N. Broadway, Suite 900, St. Louis, MO 63102. No phone call/EOE

Web Developer needed by a Design/Communication Company in North Chicago, IL. Must have a Bachelor's Degree in Computer Science, Mathematics, with 6 months experience in database design and development. Respond to: VP Strategic Accts., Studio North, Inc., 1618 Green Bay Road, North Chicago, IL 60064

Management & Systems Consulting Advertisement

Permanent opening for Project Manager - SAP Specialist in Chicago, IL to: Conduct initial business analysis of company operations to identify areas of cost reduction and system optimization through the implementation of the R/3 Network Software System; define a company-wide project plan for the implementation of the system; manage and direct overall network system and system configuration in areas of accounting, manufacturing, sales and human resources; manage, direct and supervise programmers in implementing the system; manage and direct project budgeting, financing and pricing. Must have Master's degree in Communications Science, Business Administration or related field as well as two years of experience as a Systems Analyst - SAP Specialist. Send resume to: Management & Systems Consulting Inc., 70 West Madison, Three First National Plaza, Suite 1400, Chicago, IL 60202.

2 Senior Consultants for San Fran office. Positions involve design & dev't of web-based e-business applications for our clients incl testing, data model & DB Design. Involves project management working w/OO methods, MVS & UNIX, Versata, data warehouse Java. Must have BS Degree 5 yrs. relevant exp. incl. project management exp. Send res to Shared Vision Group 166 Madison Ave 6th Fl NY NY 10016 corporate@sharedvision.com

Software Engineer (multiple positions, St. Louis, MO) design/ analyze/maintain Object Oriented software applications in Windows NT/2000 environment utilizing Java, CORBA, GUI, XML, HTML, ODBC. Require BS degree in Comp. Sci., Elect. Engr., MIS or in a closely related field plus min. 2 yrs. exp. in offered position or as systems/programmer analyst. Competitive salary. Resume to: Ken Totten, Object Computing Inc., 12140 Woodcrest Executive Dr. Suite 250, St. Louis, MO 63141. EOE

Database Analyst (Kansas City, MO) to assist in the design and enhancement of medium-to-large scale database structures in both main frame and client-server environment, applying RDBM tech., C, UNIX, Oracle, PL/SQL, and VMS. Requires B.S. in Comp. Sci., Elec. Engr., MIS or in a closely related field plus min. 1yr. exp. Competitive salary, 40hr./wk. Mon.-Fri., 7am-4pm. Resume to: Ms. Binkley, HR, Commerce Bank, 825 Main St. Kansas City, MO 64105. No phone call/EOE

COMMUNICATIONS TECHNOLOGIST needed, to be responsible for interfacing between IT engineers and large end users in system design for server based local area and wide area networks, including optical networks, providing technical education. Requires minimum 2 years experience. Submit resume to Michael Mellinger, HR, Belden Wire & Cable, 2200 US Highway 27 South, Richmond, IN 47374. EOE

Systems Analyst. Analyze, design, and develop new computer systems and application programs to meet customer needs; develop and implement conversion plans, prepare and process models, direct and review the work of development team members, and assign team members to projects. Must have Bachelor's degree in Computer Science, Engineering or related plus one year experience and knowledge of EJB, Threads, Swing, Java 2, HTML, TCP/IP, UNIX and Oracle/ SQL. 40 hrs/wk. $100,000/year. Must have proof of legal authority to work in the United States. APAC CUSTOMER SERVICES, INC., Attn: Cindy Corkery, 6 Parkway North Center, Deerfield, IL 60015. Toll free # (800) 776-2722. EOC./AA

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E-Commerce/Web Support Assistant to develop and maintain the websites; coordinate soft installations; design GUI screen and graphics, administer and monitor users accessing the systems, provide training and assistance to customers on in-house computer systems, operate Data Security System. B.S. in business administration or computer fields and one year of web support experience that include Network, Seagull Jwalk developer, AS/400, Window NT, Java Script, ASP, HTML, SQL, Clarion Language, Web Tool and Animation Tool. 40hrs/wk. 8am-5pm. M-F. Job is in St. Louis, MO. Send resume to: Automated Installment System Co., 955 Executive PKWY, Suite 201, St. Louis, MO 63141 (Attn: Carol Manson) with proof of legal authority permanently to work in U.S.

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BUSINESS ANALYST (MULTIPLE OPENINGS)
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SYNAPSE GROUP, INC., a leading computerized magazine marketing company, is looking to hire qualified candidates with at minimum, a Bachelors degree in Computer Science, Information Systems or it's equivalent for the following positions:
WEB DEVELOPER to design, develop and create Internet application systems that can handle order entry database, data retrieval, report generation and document management, using HTML, SQL and ASP for requesting clients. Maintain existing systems and add enhancement features. Two years of experience in the job offered required with sound knowledge in Java, JavaScript, HTML, SQL, ASP, Front Page, Sun Solaris, Window 95/NT, Access and Oracle database.
COMPUTER PROGRAMMER to plan develop, test, document and update computer programs, evaluate user requirements, prepare flow charts and diagrams and convert project specifications. Two plus years of software development experience required with knowledge in Java, Java Script, HTML, Unix, Telnet, XSLT, COBOL, Windows NT, Web Development, Access and Oracle database.
ASP DEVELOPER to implement Internet applications for order entry data retrieval, report generation and document management using ASP, HTML and SQL programs to implement new systems into several multi/functional tiers that handle data processing and database and to maintain and add enhancement features to existing systems. Two years experience in the job offered required with extensive knowledge in ASP/ADO, VBScript, IIS, SQL, Oracle RDBMS, Unix, Java, HTML, and WWW and related protocols.
E-COMMERCE DEVELOPER to develop and design e-commerce applications. Design, develop and create Internet application systems that can handle order entry, database, data retrieval, report generation and document management, while maintaining and adding enhancement features to existing systems. At minimum Bachelors degree in noted fields above or in Business Administration or it's equivalent required plus two years of experience in the job offered with extensive knowledge in ASP/ADO, VBScript, IIS, SQL, Oracle RDBMS, Unix, Java, HTML, and WWW and related protocols.
The company offers a competitive compensation/benefit package and an environment where achievements are recognized & professional growth is encouraged. Qualified applicants are encouraged to mail resumes to HR Department, Synapse Group, Inc. Four High Ridge Park, Stamford, CT 06905-1325

For over 20 years, **Syntel** employees across North America, Europe, and Asia have helped build advanced information technology systems for leading Fortune 500 companies and government organizations to improve their efficiency and competitiveness. Today, Syntel professionals are building rewarding careers by providing solutions in e-business, CRM, Web Design and Data Warehousing.

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- Websphere
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- Web Architects
- Datawarehousing
- Informix, C or UNIX
- Oracle Developer or Designer 2000
- JAVA, HTML, Active X
- Web Commerce
- SAP/R3, ABAP/4 or FICO or MM & SD
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WEB DEVELOPER

This position is on the Internet/Intranet team. The web developer builds software applications to provide the technical architecture of web sites and/or web-based software products and converts data from specifications and statements of problems to computer code. The web developer programs in Java Script, Java, and HTML, writes scripts for comprehensive web sites; authors complex web pages and web sites; integrates artwork, text, video, and animations within Java, Java Script, and HTML; creates customer applications for Web sites; builds user interface applications; tables, frames, forms, and back-end databases using programming and scripting languages; writes scripts with the browser and verifies content and formatting. The web developer also does project planning and leading, creates prototypes, functional specifications for software projects, and technical methodologies. In addition the web developer writes, verifies, and performs test plans for Internet programs, and determines new web technologies to meet the needs of web development.

REQUIREMENTS: Bachelor's degree in computer science or a related field from a four-year college or university; excellent communication and interpersonal skills; knowledge and/or experience with Java, JavaScript, HTML, Tuxedo and C/C++. This is a 40 hour per week position located in Overland Park, KS.

For consideration qualified candidates should forward a cover letter, resume, and salary requirements to Yellow Technologies, Inc. Attn: Human Resources @ LB. MS B105, 10990 Roe Ave, Overland Park, KS 66211. EEO/AA. Applicants must have proof of legal authority to work in the United States.

SR. SYSTEMS ANALYST Design, dvlp, modify, & support Enterprise-wide Resource Planning System. Analyze functionality, create data flow diagrams, implement graphic user interfaces. B.S. Computer Science or equiv + 5 yr in job or software programming/analysis exp reqd. MFG/PRO Progress exp reqd. 500K/yr. Apply to Brevaplanet, 5875 Peachtree Industrial Blvd #200, Norcross, GA 30092.

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Emerald Solutions, Inc.
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EOE

Software Engineer IV

[illegible]

We seek IT/business profes sionals with industry exp. (various skills combination req'd.) in Oracle, Oracle DBA, Oracle Financials, Informix DBA, Java, CGI, Perl, Sybase DBA, VB, ActiveX, ASP, Visual Age for Java, Unix, C/C++, etc. Some positions require MS or equiv. CS, Engg, Math, Bus. Admin, or rel. field. Others require BS or equiv as above. Pay matching exp. Foreign educ. equiv &/or combination of educ/exp. accepted. Travel reqd. Resume only to Sterite Software USA, Inc., 111 South #2, Princeton Arms, Cranbury, NJ 08512.

Instructional Research and Development Specialists/Instructional Technology Professionals needed. The Foreign Language Center of the Ohio State University is seeking qualified candidates possessing MS/MA or equivalent and relevant work experience. Work with some of the following: JAVA, Javascript, Lingo, Macromedia Authorware /Director/Dreamweaver/SoundEdit/Fireworks/Freehand, Adobe/After Effects Photoshop, Illustrator and Premier, Media 100. Send resume to Foreign Language Center ATTN Karen Sobul, 276 Cunz Hall, 1841 Millikin Road, Columbus OH 43210.

COMPUTER IT
Business Applications Specialist. Requires Bachelor's degree (or higher) in Computer Science, Computer Engineering or Mechanical Engineering & 3 years' exp. in the job offered or 3 years' exp. in programming or development in C in a Client/Server environment and in system development lifecycle in a Client/Server environment. Exp. must also involve 1 year in programming or development in Perl in a Client/Server environment. (Exp. may be concurrent & may be gained prior to completion of degree.) Utilize C & Perl in a Client/Server environment to research, design, develop, maintain, & support Inter Application Communications (IAC) environment to provide infrastructure for system integration through effective inter-application messaging. Utilize system development lifecycle in a Client/Server environment to develop & maintain IAC system utilities, including delivery subsystem processes, error handling processes, database query scripts, Connect: Direct scripts, archive processes, & MQSeries user exits. Analyze software requirements to determine feasibility of infrastructure design. Evaluate interface & integration of IAC utility systems. Execute integration, ongoing management & operations improvement of IAC utility systems & components. Establish, document, & maintain standards for IAC environment. Participate in software installations, monitor performance & implement necessary corrective actions. 40 hrs./wk. 8:00 a.m. - 5:00 p.m. Apply with resume to Human Resources Dept. (BL), Nestle USA, Inc., 5750 Harper Road, Solon, OH 44139.

SR. SOFTWARE CONSULTANT
Design, dvlp, code, test software applications. Work in networking protocols, data communication interface, browser-based programming & GUID. B.S. Computer Science or equiv + 2 yr in job or software dvlpmt or programming exp. HTML, JavaScript, Speed Script & Progress RDBMS reqd. $78,200/yr. Apply to Braveport, 5875 Peachtree Industrial Blvd #200, Norcross, GA 30092.

AI Labs, located in Mt. Prospect, IL, is presently considering applicants to fill senior & mid-level positions for:
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Qualified candidates should possess MS or equivalent & relevant work exp. We prefer candidates with a minimum of 3-5 yrs exp. designing & developing N-tier distributed architectures in a variety of technical environments & platforms. Please fwd resume to, Fax # 847 745-0449, or email kuramach@yahoo.com

Software Engineer III

[illegible]

JOB TITLE Senior Systems Analyst
TOTAL HOURS PER WEEK: 40
HOURS: 8:00 A.M TO 5:00 PM
SALARY: $82,950 ANNUALLY
EDUCATION: Masters in Computer Science / Math or Equivalent
EXPERIENCE: 2 Years
Duties: Application systems development, testing and implementation. Analyzes user requirements, procedures, problems to automate processing or to improve computer system. Confers with personnel of organizational units involved to analyze current operational procedures. Identify problems and learn specific input, how data is to be summarized and formats for reports. Writes detailed description of user needs, program functions, and steps require to develop or modify computer programs. Conduct studies pertaining to development of new information systems to meet current and projective needs. Plans and prepares technical reports, memoranda and instructional manuals as documentation of program development. Upgrades system and corrects errors to maintain system after implementation. Provides guidance and mentors to other systems analysts in a supervisory position.

Applicants must show proof of legal authority to work in the U.S.

Please send Resume to:
ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY
401 South State Street- 7 North
Chicago, Illinois 60605
Attention: Sheila Lindsey
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SOFTWARE ENGINEER
Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Java, JavaScript, C++ and Oracle. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Java, JavaScript, C++ and Oracle. Salary $66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Beaver County Team PA CareerLink, 2103 North Avenue, Beaver Falls, PA 15010-3957. Job No. WEB191602.

SOFTWARE ENGINEER
Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Java, JavaScript, C++ and Oracle. Requirements: Bachelor's Degree, educational or functional equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer; knowledge of Java, JavaScript, C++ and Oracle. Salary: $77,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Fayette County Team PA CareerLink, Attn: JS Supervisor, 32 Iowa Street, Uniontown, PA 15401-3513. Job No. WEB191796.

DATABASE ADMINISTRATOR
Database Administrator to do logical and physical design of Oracle database. Code, test and implement Oracle scripts applying knowledge of Database Management Systems. Calculate optimum values for Oracle database parameters, performance tune Oracle databases. Model Oracle database security; manage backup and recovery of Oracle databases; make changes to Oracle database applications using expertise in Oracle database administration which includes logical design, physical design, performance tuning, backup and recovery, coding of scripts, knowledge of Oracle 7.3, SQL *DBA, Pro *C (tools) and PL/SQL (Language). Requirements: Bachelor's Degree, educational or functional equivalent, in Computer Science or related field and two years experience as a software engineer or database administrator; expertise in Oracle database administration which includes logical design, physical design, performance tuning, backup and recovery, coding of scripts; knowledge of Oracle 7.3, SQL *DBA, Pro *C (tools) and PL/SQL (Language). Salary: $66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and relocation. Apply: Manager, Armstrong County Team PA CareerLink, 1270 North Water Street, PO Box 758, Kittanning, PA 16201-0758. Job No. WEB192730.

SENIOR SOFTWARE ENGINEER to design, develop, and implement application software in a client/server environment using C, C++, SQL, Oracle, Informix, XML, HTML, Java, J2EE, JSP, EJB, JNDI, RMI, JMS, and JAAS under UNIX operating system. Develop and implement software systems using application servers, including BEA Weblogic Server and NetDynamics. Perform object oriented analysis and design using Together J CASE tools and Rational Rose. Perform system life-cycle development using Rational Unified Process methodology. Perform logical and physical data modeling using PowerDesigner CASE tools. Perform database tuning, optimization and development for Oracle and Informix databases. Require M.S. degree in Computer Science, an engineering discipline, or a closely related field with two years of experience in the job offered or as a Systems Engineer. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Send resume to: Roz L. Alford, Principal, ASAP Staffing, LLC, 3885 Holcomb Bridge Rd., Norcross, GA 30092; Attn: Job AP.

SOFTWARE ENGINEER
Analyze, study and evaluate existing systems. Will design, develop and test software applications as per client requirements and budgetary constraints. Will create interface programs and will document process flow and prepare program specifications. Use tools such as charts and diagrams to assist in problem analysis and submit recommendations for solutions. Responsible for testing and debugging in conjunction with user requirements. May manage and supervise the work of junior technical staff. Will use technologies like COBOL, PL/SQL, SAS, Oracle, Windows NT. Minimum requirements include a Master Degree or equiv. in Engg/CS/Sci-related and 3 years of related experience in lieu of Master Degree or equiv. and three years of experience employer will accept a Bachelor degree or equiv. and five years of experience. Full-time position (40hrs, 8:30am-5:30pm). Salary: $62,400/yr. Overtime: n/a. **Must have proof of legal authority to work in the United States. Send your resume to the Iowa Workforce Center, 21 & Watson Powell Jr. Way, Des Moines, Iowa 50309-1727. Please refer to Job Order IA1101404. Employer paid advertisement.**

Senior Systems Specialist, 40 hrs./wk; 8:30a.m. to 5:00 p.m., $60,000 annually. Duties: using Oracle, Cobol, SQR and PeopleTools programming languages, customize, troubleshoot and support the firm's financial systems. Develop and design new application functions and efficiently build interface modules to process data. Analyze business requirements, map data from systems to PeopleSoft and current data, and develop best business practices. Must have a Bachelor's degree in Computer Science or Computer Engineering and 4 years in job offered as a computer consultant, systems analyst or technical consultant; Four years of experience in job offered or related field must have included work in PeopleTools programming languages, Oracle, SQR and Cobol. Applicants must show proof of legal authority to work in the U.S. Send resumes to ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY, 401 South State Street - 7 North, Chicago Illinois 60605, Attention: Leonard Bokas, Reference # V-IL 26749-B AN EMPLOYER PAID AD. NO CALLS - SEND 2 COPIES OF BOTH RESUME & COVER LETTER.

SOFTWARE ENGINEER
Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Java, JavaScript, C++ and Oracle. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer; knowledge of Java, JavaScript, C++ and Oracle. Salary: $66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Westmoreland County CareerLink, 300 East Hills Street, Youngwood, PA 15697-1808. Job No. WEB191919.

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SOFTWARE ENGINEER
Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Java, JavaScript, C++ and Oracle. Requirements: Bachelor's Degree, educational or functional equivalent, in Computer Science or related field and knowledge of Java, JavaScript, C++ and Oracle. Salary: $75,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Indiana Job Center, 350 North Fourth Street, Indiana, PA 15701-2000. Job No. WEB191607.

Catalina Marketing Corporation is currently seeking the following:

SQA ANALYSTS

Responsible for testing of software and utilizing POS systems. Requires - experience in computer software engineering, and a Bachelor's degree in Systems Management or Computer Engineering.

STORE SYSTEM PROGRAMMER

Responsible for designing, writing, and maintaining programs and object-oriented C/C++ programming. Requires Bachelor's degree in Electrical & Electronics Engineering or equivalent.

Send resumes to:
Catalina Marketing Corporation
Attn: HR
200 Carillon Parkway
St. Petersburg, FL 33716
EOE/Drug-free workplace.

AD INDEX

SALES OFFICES

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Outsourcing

$50 millioo — is expected to yield immediate gains for the bank by automating its delivery mechanisms and streamlining its IT infrastructure, said Kevin Lloyd, Barclays' chief technology officer.

"The way it stacks up, we would have paid a whole bunch of money to IBM anyway," said Lloyd. "By doing a structured deal, we'll pay less and get more."

Unlike typical outsourcing deals, Barclays' internal staff will develop a series of custom-built applications with IBM tools and technology, relying on the vendor's expertise for design and implementation guidance.

The terms of the deal are aligned with completing individual projects, which ensures Barclays that it will receive a high level of support from IBM, Lloyd added. As part of the project, Barclays plans to use IBM software to launch a project to integrate legacy systems this fall for its banks in Spain, France and Portugal. The bank also plans to develop a corporate portal and a mobile applicatioo for bank managers in England.

"Its not exactly outsourcing, because Barclays is maintaining a lot of control," said Albert Nekimken, an analyst at Input, a market research firm in Chantilly, Va. "They're not handing the responsibility over to someone else, but using them for advice."

The bank expects to use a wide range of software products and tools from IBM and its Lotus Development Corp. and Tivoli Systems Inc. subsidiaries, including the DB2 database, MQSeries messaging tools, Lotus Notes and the Websphere application and portal servers.

But IBM isn't the only game in town for Barclays. The bank also struck similar multimillion-dollar software package deals with Microsoft Corp. and Oracle Corp. this spring, Lloyd said.

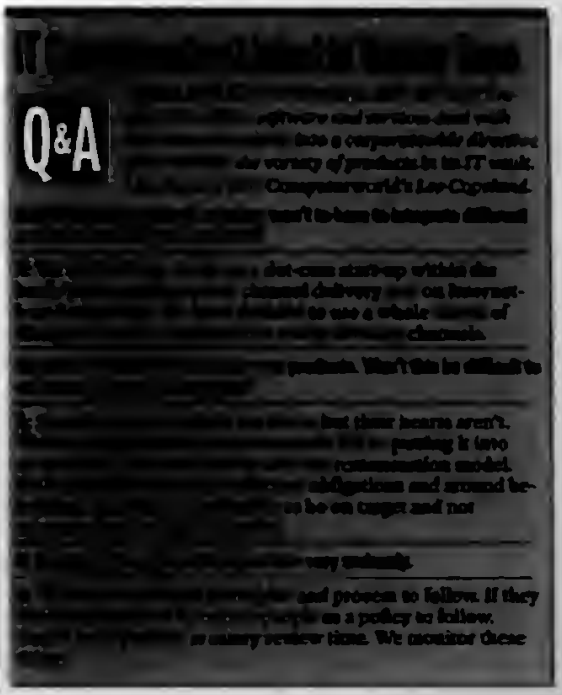
"We have reduced the oumber of decision points and eliminated a number of products and suppliers, eveo if they were compliant with our architecture," said Lloyd, who declined to name products the company has jettisoned. "This enables us to streamline our operating model and deliver applications more quickly without creating additional maintenance and costs."

Evaluating individual software products and applications on a per-case basis and then trying to weave them into an existing infrastructure is time-consuming and costly, said Avlvah Litan, an analyst at Gartner Inc. in Stamford, Conn. "It saves a lot of time and money to focus on best-of-breed tools; it's more economical for Barclays to focus on their financial product delivery and branding and marketing," she added.

SAS AB is taking a similar approach. The Stockholm-based airline has adopted a two-veodor strategy, relying on Microsoft and IBM for its complex software infrastructure, said Peter Muller, deputy director of sales and revenue management solutions at SAS's IT group.

"It's difficult and takes time to reach this type of decision, but in the end you get more substantive partnerships," he said. After finalizing on Microsoft and IBM development tools earlier this year, for example, SAS asked both vendors to create a proof-of-concept applicatioo that demonstrated solid interoperability between components oo Microsoft's .Net platform and IBM's WebSphere application server.

"We wanted them to participate in our projects and take responsibility, and it's nice to prove that the [fine print] outside the box is also inside the box," Muller added.



In Barclays' case, taking the focus off selecting individual products and integrating them into its existing architecture allows it to put greater focus on its financial services and on using the Web as another distributioo channel, said Lloyd.

Implementing electronic distribution channels is a top imperative among financial services firms, such as Barclays and Merrill Lynch & Co.

"The biggest change at Merrill Lynch is the distribution model and embracing e-trading like never before," said John Walsh, vice president of wholesaling technology at Merrill Lynch. The $45 billion New York-based financial services firm recently tapped Sterling, Va.-based Global Trade Technologies Inc. to deliver its bond products to its external and internal clients via the Web. "The innovatioo in financial services is oo the distribution model, and [eliminating] time-to-market issues is our top priority," Walsh said.

Microsoft Supporters Raised From the Dead

BY MATT BERGER

Microsoft Corp.'s antitrust battle against the U.S. government has drawn out supporters of a quick resolution — some of whom are dead.

Utah's state attorney general's office, a plaintiff in the antitrust case along with 17 other states and the U.S. Department of Justice, confirmed last week that it has been the target of a letter-writing campaign from lobbyists asking the government to go easy oo Microsoft.

But of the more than 400 letters in support that landed oo the desk of Utah Attorney General Mark Sburtleff, two were signed by deceased Utah citizens, according to state officials. The *Los Angeles Times* first reported the development on Aug. 23.

"It just became apparent that a lot of the letters we received were the same," said Paul Murphy, a spokesman for the Utah attorney general's office. "It was clear that each individual person didn't sit down and write these letters."

After some inquiry, the agency discovered that not only were the letters not handwritten, but also many of them included falsified information, such as names of dead residents; one was from a resident of "Tuscon, Utah," a city that doesn't exist. Other attorneys general involved io the case have also received suspect letters, Murphy said.

Microsoft was unfazed by the news.

"I think that it's obvious that our competitors have waged a political campaign against Microsoft for a long time oow," said Jim Desler, a legal spokesman for the company. "It's hardly a surprise that organizations and companies would mobilize and counter those efforts."

Groups funded by Microsoft competitors have also been heavy-handed in lobbying the state attorneys general. ProComp, a Washington-based group funded by Oracle Corp., Sun Microsystems Inc. and other software companies, presented its case against Microsoft to top law enforcers during the attorneys general's annual national gathering in June.

Berger writes for the IDG News Service.

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True Engineering

SOFTWARE ENGINEERING ISN'T "software engineering." I didn't make that clear three weeks ago in this space, when I wrote that "software engineering" is to engineering what fantasy baseball is to baseball — in other words, not much like the real thing. And I should have made it clear, because there really are software engineers out there — people who apply engineering principles to software development.

Trouble is, most of the people we flatter with the title "software engineer" don't do that. Instead, they just write code and then keep patching it to fix bugs until it's stable enough to foist off on users.

That's not software engineering — just "software engineering."

We learned to do this ersatz "software engineering" because it seemed faster and cheaper than all that complicated planning and designing and verifying that real software engineering methodologies called for. Getting software right looked too expensive — better to get it out the door, fast.

If the software crashed, well, users howled. Then we'd patch the bugs, update the software and go on our merry way.

And we've gotten away with it, too, haven't we? At this point, users accept a pretty high level of crashing in applications and eveo wbole systems. And today, code-and-patcb is the order of the day in corporate IT shops, at big software vendors and eveo in the schools turning out our new "software engineers."

Trouble is, crashes areo't our higgest problem from unengineered software anymore.

There's another kind of bug that doesn't anoounce itself the way a crash does. It just sits silently until someone finds it. And the people who discover it aren't about to tell us what they've found.

After all, why would bad guys tell us we've got security holes in our systems?

So we find out the bard way — when a Code Red or some other worm or virus takes advantage of an overflowing buffer or some other never-should-have-happened bole in uneogineered software.

(And with Code Red, we were lucky. If the louts who launched it hadn't been so ham-fisted in announcing themselves oo every server their worm invaded, security people might not have had such a good chance to warn everyone to patch their exposed systems.)

It oever used to matter. Eveo a decade ago, our systems weren't connected to the Internet. They weren't accessible 24 hours a day to every industrial spy, crook, cracker and bored teenager. And their code waso't available in shrink-wrapped packages to anyone who wanted to comb it for flaws to exploit. Physical security and technical obscurity protected us.

But oot anymore. And never again.

Which means we face a choice. We can either make real software engineering a priority, both for our owo programmers and our software vendors. Or we can sit waiting as wave after wave of increasingly effective, increasingly nasty attacks on security holes become increasingly expensive to our businesses.

Software engineering iso't impossible. It doesn't require replacing your programming staff with cream-of-the-crop geniuses. Mainly, it requires training and discipline. At its core, engineering means applying already-existing solutions to appropriately identified problems. Any competent coder can learn the techniques. And any programmer who has suffered through endless bug-fix cycles has the discipline to do software engineering.

Yeah, it's a little more expensive and takes a little longer upfront. You'll probably get that back in bug fixes you don't have to make and schedules that doo't slip. But mainly, you'll get the security that only comes from the real thing.

Because those quotes around "software engineering" are a luxury we can no longer afford. ◗

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

SHARK TANK

BOSS DUMPS a load of additional work and new weekly reports in IT pilot fish's lap. "I've hired a team leader," boss says, "and he needs something to do to call his own."

FILLING OUT an online application for a technical publication, pilot fish gets to the last question: "Given that there is no way for you to sign this electronic form, our audit agency requires the answer to a question that only you would know. Please indicate your eye color."

GUIDED BY a step-by-step instruction sheet, tech is changing the ribbon on a band printer. How will you clean that ink off your hands? IT pilot fish asks. "Using the enclosed premoistened disposable towelette," tech reads. He picks up the box and gives it a shake. Out drops a pair of vinyl gloves.

CODE NAME: BLACK HOLE IT division head enthusiastically tells pilot fish and everyone else in his division about the insights he picked up after a sit-down with the CEO of a big storage vendor. Boss is most excited about "the latest security measure [the vendor] is touting: the write-only disk."

CONSULTANT pilot fish tries to explain cost savings and other benefits of using electronic airline ticketing to an administrative assistant, but she cuts him off. "I love e-tickets," she says, "as long as they come in the mail."

CLAIRVOYANT ERP? Paper company comptroller asks ERP implementation pilot fish to get the new system to generate an additional report: "One that would tell her who took any materials from the warehouse without recording the transaction."

Report to the Shark: **sharky@computerworld.com.** You get a sharp Shark shirt if your true tale of IT life sees print – or if it shows up in the daily feed at *computerworld.com/sharky*.

The 5th Wave

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"I'm not sure a fantasy sports web site for professional wrestling would work. Professional wrestling is already a fantasy sport."

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